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A History of the Animal World in the Ancient Near East

Edited by

Billie Jean Collins

Brill

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A HISTORY OF THE ANIMAL WORLD IN THE ANCIENT NEAR EAST

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HANDBUCH DER ORIENTALISTIK

SECTION ONE

THE NEAR AND MIDDLE EAST

EDITED BY

H. ALTENMÜLLER · B. HROUDA · B.A. LEVINE · R.S. O'FAHEY
K.R. VEENHOF · C.H.M. VERSTEEGH

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A HISTORY OF THE ANIMAL WORLD IN THE ANCIENT NEAR EAST

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BILLIE JEAN COLLINS

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For my parents

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CONTENTS

List of Figures ix
List of Tables xvii

Part I. The Native Fauna

ALLAN S. GILBERT: 1. The Native Fauna of the Ancient Near East 3

Part II. Animals in Art

ANN C. GUNTER: 2. Animals in Anatolian Art 79
PATRICK F. HOULIHAN: 3. Animals in Egyptian Art and Hieroglyphs 97
CATHERINE BRENIQUET: 4. Animals in Mesopotamian Art 145
MARGARET COOL ROOT: 5. Animals in the Art of Ancient Iran 169
ANNIE CAUBET: 6. Animals in Syro-Palestinian Art 211

Part III. Animals in Literature

BILLIE JEAN COLLINS: 7. Animals in Hittite Literature 237
EMILY TEETER: 8. Animals in Egyptian Literature 251
BENJAMIN R. FOSTER: 9. Animals in Mesopotamian Literature ... 271
ODED BOROWSKI: 10. Animals in the Literatures of Syria-Palestine 289

Part IV. Animals in Religion

BILLIE JEAN COLLINS: 11. Animals in the Religions of Ancient Anatolia 309
EMILY TEETER: 12. Animals in Egyptian Religion 335
JOANN SCURLOCK: 13. Animals in Ancient Mesopotamian Religion 361
JOANN SCURLOCK: 14. Animal Sacrifice in Ancient Mesopotamian Religion 389
ODED BOROWSKI: 15. Animals in the Religions of Syria-Palestine 405

Part V. Studies in the Cultural Use of Animals

DOUGLAS BREWER: 16. Hunting, Animal Husbandry and Diet in Ancient Egypt 427
BRIAN HESSE AND PAULA WAPNISH: 17. An Archaeozoological Perspective on the Cultural Use of Mammals in the Levant 457

ALLAN S. GILBERT: Appendix. Bibliography of Near Eastern Zoology 493

References 537

Index 601

LIST OF FIGURES

Chapter Two

2.1 Figurine of a seated female flanked by felines, unrestored. Çatal Höyük, Neolithic period (ca. 6500 B.C.). Clay. H. 20 cm. After Mellaart (1967: pl. IX). 82

2.2 "Standard" mount in the form of a stag. Alaca Höyük, Early Bronze Age (ca. 2300 B.C.). Bronze and silver. H. 52 cm. Photo courtesy of the Museum of Anatolian Civilizations, Ankara. 84

2.3 Wall relief of a pair of leopards. Çatal Höyük, Neolithic period (ca. 6000 B.C.). Plaster and paint. H. over 1 m. Photo courtesy of the Museum of Anatolian Civilizations, Ankara. 86

2.4 Orthostat relief of a Hittite king and queen in front of altar facing an image of a bull atop a pedestal. Alaca Höyük, Hittite Empire period (ca. 1400–1300 B.C.). Andesite. H. 1.26 m. Photo courtesy of the Museum of Anatolian Civilizations, Ankara. 91

2.5 Vessel in the form of a kneeling stag. Hittite Empire period (ca. 1400–1200 B.C.). Silver with gold inlay. L. 17 cm. Courtesy of the Metropolitan Museum of Art. 94

2.6 Relief around the neck of a silver rhyton in the shape of a stag's forequarter. Hittite Empire period (ca. 1400–1200 B.C.). Courtesy of the Metropolitan Museum of Art. 94

Chapter Three

3.1 Detail of ornamental hieroglyphs from the *sed*-festival shrine of Sesostris I at Karnak (12th dynasty). These animal-signs, representing a long-horned bull, a lappet-faced vulture, and the deadly horned viper, spell Kamutef "bull of his mother," an epithet of the gods Min and Amun. Photo courtesy Patrick F. Houlihan. . . 101

3.2 Detail of wall painting from tomb of Horemhab at Thebes showing a small flock of captive dalmatian pelicans. Their eggs are depicted on the left, neatly

arranged in a pottery vessel and covered with straw to protect them. 18th dynasty. Photo courtesy Patrick F. Houlihan. 109
3.3 A dying red fox seeks refuge behind a bush. Wall painting from tomb chapel of Userhet at Thebes. 18th dynasty. Photo courtesy Patrick F. Houlihan. 112
3.4 A painted relief depicting a retainer bringing an offering of a bubal hartebeest (left) and an addax, which are led on leashes to enrich the menu of the deceased. From the tomb chapel of the mastaba of two senior officials at Saqqara. 5th dynasty. Photo courtesy Patrick F. Houlihan. 113
3.5 Relief of an offering bearer bringing a supply of freshly caught Nile fish. These include a mullet, two kinds of catfish, and a massive tilapia. From the tomb chapel of the mastaba of the vizier Kagemni at Saqqara. 6th dynasty. Photo courtesy Patrick F. Houlihan. 115
3.6 Carved relief from the funerary stela of Wahankh Intef II, picturing three of his foreign dogs. Their names are provided in hieroglyphs beside them. 11th dynasty. Photo courtesy Patrick F. Houlihan. 118
3.7 Wall painting from the tomb-chapel of Rekhmire at Thebes showing the arrival of foreign tribute, including live animals such as this giraffe, which is being led by two Nubians using ropes tied to its forelegs to restrain it. Note the Green Monkey that climbs the giraffe's long neck. 18th dynasty. Photo courtesy Patrick F. Houlihan. 119
3.8 A man holds two baboons on leashes in a market scene. One of the baboons has apprehended a boy about to steal something from a basket. Note the baby baboon hold on to its mother. From the tomb-chapel of the mastaba of Tepemankh at Saqqara. 5th dynasty. Photo courtesy Patrick F. Houlihan. 119
3.9 Relief of a young boy holding a Hoopoe, from the mastaba of Ptahhotep II, Saqqara. 5th dynasty. Photo courtesy Patrick F. Houlihan. 122
3.10 Ostracon with red and black ink drawing, showing an Egyptian tabby wielding a long staff and herding a flock of six ducks or geese. Above the birds, there

is a nest filled with a clutch of eggs. The cat is equipped with a small bag of provisions suspended from the end of a long crook that it carries over its shoulder. Deir el-Medina. Ramesside period. Photo courtesy Patrick F. Houlihan. 125

3.11 Wall painting from the tomb chapel of Rekhmire at Thebes showing the arrival of foreign tribute, including live animals. In the lower register, Syrians deliver some prize products and fauna from their distant country. Here they are shown bringing a Syrian bear, wearing a collar and held on a leash. The man with the bear also carries a great elephant's tusk. Behind is a rather small Syrian elephant, also collared and leashed. 18th dynasty. Photo courtesy Patrick F. Houlihan. 131

Chapter Four

4.1 Protodynastic bronze chariot from the "Shara temple," Tell Agrab. H. 7 cm. Iraq Museum, Baghdad. Photo courtesy Hirmer Verlag, Munich. 146

4.2 Fragment of a Sumerian relief from Larsa showing four overlapping horses. Early Dynastic II. H. 15 cm. Iraq Museum, Baghdad. Photo courtesy J.-L. Huot, Délégation Archéologique Française en Iraq. 148

4.3 Two impressions of Urukian cylinder seals: a) Khafadje, temple of Sin II (GMA 629), cowshed; b) Uruk, the "good shepherd" (GMA 638). 149

4.4 Protodynastic bronze lintel from the temple of El 'Ubaid. Composite bird grasping two stags. H. 107 cm. Photo courtesy of the Trustees of the British Museum, London. 150

4.5 Animal depictions on prehistoric wares. Halafian bowl from Arpachiyah. Internal drawing showing a complex scene with a lion hunt and one of the external metopes with bucrania and snake(?). H. 20 cm. After Hijara (1978: 126 fig. 1). 151

4.6 Some of the most ancient artistic stereotypes: a) line of goats or alternating ram and ewe; b) roaring or leaping lion; c) kneeling calf; d) harnessed equids. 153

4.7 Schematic figurine of a wild pig from Tell el'Oueili, Ubaid 4. Baked clay with paint. H. 5 cm. Iraq

Museum, Baghdad. Courtesy J.-L. Huot, Délégation Archéologique Française en Iraq. 155
4.8 Bird's head from Nemrik. Stone, PPNB. Iraq Museum, Baghdad. H. 10.4 cm. Photo courtesy John Fuller, Cambridge, UK. 155
4.9 Bowl from Samarra decorated with stags with distorted antlers. Vorderasiatisches Museum, Berlin. After Hertzfelt (1930: Taf. XI). 157
4.10 Amulet from the *Sammelfund*, Uruk. Calf carved in the round, marble and lapis lazuli. H. 2.6 cm. Photo courtesy Vorderasiatisches Museum, Berlin. 159
4.11 Two lions from Haradum, 18th century. Baked clay (modeled and molded). H. ca. 60 cm. After Kepinski-Lecomte (1992: figs. 152, 153). 162
4.12 Ophidian figurine from Tell el'Oueili, Ubaid 4. Baked clay. H. 16.5 cm. Iraq Museum, Baghdad. Photo courtesy J.-L. Huot, Délégation Archéologique Française en Iraq. 163
4.13 Detail of exotic animals from Black Obelisk of Shalmaneser. Diorite. Courtesy of the Trustees of the Bristish Museum, London. 167

Chapter Five
5.1 Drawings of modern impressions of stamp seals from Tepe Giyan: a) Kelsey Museum 91.3.99; b) Kelsey Museum 91.3.8; c) Kelsey Museum 91.3.158; d) Kelsey Museum 91.3.104; e) Kelsey Museum 91.3.95. Scale 1:1. 174
5.2 Drawings of Beakers from Susa: a) Louvre Sb 3168. H. 30 cm. After Herzfeld (1941: fig. 109); b) Louvre Sb 3174. H. 28.9 cm. After Herzfeld (1941: fig. 86). . . . 175
5.3 Composite drawings at ca. 2:1 of seals used on Persepolis Fortification tablets: a) PFS 1*; b) PFS 35*; c) PFS 83*. Scale bar indicates 1 cm. 182
5.4 Tribute group from the Apadana at Persepolis showing ram-headed torques in hands of figure on left. Photo courtesy of M. C. Root. 190
5.5 Drawing of a modern impression of a stamp seals from Tepe Giyan. Kelsey Museum 93.1.140. Scale 1:1. 193
5.6 Lion and Bull symplegma on the Apadana at Persepolis.

Photo courtesy M. C. Root. 194
5.7 Bull's ear inserts for protome capital at Persepolis. Photo courtesy The Oriental Institute of the University of Chicago. 196

Chapter Six
6.1 Stone stela from the vicinity of Amrit (Syria) showing a storm god mastering a small lion and perched above a lion striding over mountains. AO 22247. Ca. 750–650 B.C. Photo courtesy Musée du Louvre. 214
6.2 Bronze figurine of a young bull with remnants of silver leaf. From Ashkelon. Middle Bronze Age. Photo courtesy Ashkelon Excavations. 216
6.3 Duck-shaped cosmetic box from a tomb at Minet el-Beida, ancient harbor of Ugarit. Hippopotamus ivory. AO 14779. Ca. 1200 B.C. Drawing by J.-P. Lange. Courtesy Musée du Louvre. 217
6.4 Gold cup discovered in 1933 on the Acropolis at Ugarit. The individual in the chariot is probably royal, and demonstrates his prowess in the hunt, with wild goats and a family of bovines as his prey. Ca. 1200 B.C. AO 17208. D. 18 cm. Photo courtesy Musée du Louvre. . . 219
6.5 Cylinder seal from Ugarit, excavated in 1932 at Minet el-Beida. A "royal hunter" drives his chariot with the reins around his waist while shooting at a lion and trampling a vanquished enemy. A dominating falcon and a vulture survey the scene AO 15772. Ca. 1200 B.C. Courtesy Musée du Louvre. 219
6.6 Ivory carving of cow suckling her calf used on decorated furniture. Arslantash. 9th century. H. 5.8 cm. Aleppo Museum. 221
6.7 Two sides of bed panel carved in ivory from the royal palace at Ugarit: a) king in war and hunt; b) activities of royal couple. Ca. 1200 B.C. Damascus Museum. From Yon (1997: no. 21). Drawing by J.-P. Lange. Courtesy Mission archéologique de Ras Shamra and Musée du Louvre. 227-28

Chapter Eleven
11.1 Wall painting showing ritual hunt. From "shrine"

A.III.1, Çatal Höyük. Neolithic period. Courtesy Museum of Anatolian Civilizations, Ankara. 310
11.2 Animal-shaped rhyton in the form of a lion. Kültepe. Old Assyrian Colony period (19th century). Painted terracotta. H. 20.5 cm. Courtesy Musée du Louvre.... 312
11.3 Sealing showing a goddess seated on a goat over two lions (upper right). She holds one of three birds in her hand. Tablet with cylinder seal impression from Kültepe. Middle Bronze Age. After N. Özgüç (1965: 84 pl. XXIV: 71).
11.4 Relief of a god on a stag. From Yeniköy. Steatite. 14th–13th centuries B.C. H. 6.3 cm. Courtesy Museum of Anatolian Civilizations, Ankara. 315
11.5 Relief of underworld deity in the form of a dagger. Chamber B, Yazılıkaya. Ca. 1225 B.C. H. ca. 3.40 m, W. ca. 1.10. After Bittel (1976: 220). 317
11.6 Double-headed eagle from sphinx gate at Alaca Höyük. Hittite Empire period, ca. 1300 B.C. Courtesy Museum of Anatolian Civilizations, Ankara. 318
11.7 Pottery sherd with relief decoration of a tamborine payer wearing an animal mask. Hattuša. Ca. 1500 B.C. H. 14.4 cm. After Bittel (1976: 144). 330

Chapter Twelve
12.1 Animal headed deity (Khonsu) in the temple of Seti I at Abydos. 19th dynasty, ca. 1290 B.C. Note how the junction between animal and human anatomy is delineated by a broad collar. Photograph by Gaddis and Seif. Photo courtesy The Oriental Institute of the University of Chicago. 338
12.2 Weighing the heart of the deceased. The jackal-headed Anubis and falcon-headed Horus stand beneath the scale, while ibis-headed Thoth records the judgment. Ammet, part-crocodile, lion, and falcon stands ready to consume the heart of the unjust. The tribunal of the gods with various animal heads sit in attendance in the middle registers. Papyrus Milbank. OIM 10486. Ptolemaic period, 4th–1st centuries B.C. Photo courtesy The Oriental Institute of the University of Chicago... 345
12.3 The soul of the deceased and his wife in the form of

human-headed birds (*ba*). Detail from a wall painting in the tomb of Userhat at Thebes. 19th dynasty, 1290 B.C. Photo courtesy of The Oriental Institute the University of Chicago. 346
12.4 Mummified, linen-wrapped waterfowl resting in its wooden case. OIM 18275, 18276. New Kingdom ca. 1000 B.C. Photo courtesy The Oriental Institute of the University of Chicago. 347
12.5 Ritual of the "Driving of the Calves," in which the pharaoh herded four colored cows, symbolizing the search of Horus for the tomb of his slain father Osiris. Temple of Luxor, reign of Amunhotep III, ca. 1375 B.C. Photo courtesy The Oriental Institute of the University of Chicago. 350
12.6 Horus on the Crocodiles (Cippus) showing the youthful Horus grasping inimical animals (lion, gazelle, serpents, scorpions) and standing upon crocodiles. The zoomorphic form of Horus, also standing on a crocodile and a snake, appears at either shoulder. The steatite statue is incised with magical protective spells. OIM 16881. 4th century B.C. Photo courtesy The Oriental Institute of the University of Chicago. 353
12.7 Pantheistic deity with a jackal (front) and falcon (back) face, and human body with the tail of a falcon. He holds serpents and stands on crocodiles. A cobra and vulture emerge from his knees. Another serpent, its tail in mouth symbolizing the eternal cycle of the sun, encircles the upper surface of the base. OIM 11375. Bronze, Late period, ca. 4th century B.C. Photo courtesy The Oriental Institute of the University of Chicago. 354
12.8 Bronze coffin for a mummified snake. OIM 11189. Late period–Ptolemaic period, ca. 6th–1st centuries B.C. Photo courtesy The Oriental Institute of the University of Chicago. 359

Chapter Fifteen
15.1 Cult stand. Taanach. 10th century B.C. H. ca. 3 ft. Photo courtesy Zev Radovan. 406
15.2 Cultic vessel in shape of a ram with three goblets.

Gilath. Chalcolithic period. Photo courtesy Zev Radovan. 421
15.3 Ceramic cult stand with serpents. Beth Shean. Iron Age I. Photo courtesy Zev Radovan. 423

Chapter Sixteen
16.1 Location of important sites mentioned in the text. 429
16.2 Annual seasonal cycle and probable scheduling of subsistence activities. 433
16.3 Relief depicting a protesting long-horned cow being restrained with a rope and milked by two peasants. From the tomb chapel of the mastaba of the vizier Kagemni at Saqqara. 6th dynasty. Photo courtesy Patrick F. Houlihan. 437
16.4 Painted limestone relief of a pair of butchers cutting up a large, bound, sacrificial steer. The left foreleg of the slaughtered animal is tied securely to both its hind legs, and the men of busy slicing off the right foreleg. A third butcher stands just to the left sharpening his knife on a whetstone attached to his belt. From the tomb chapel of the mastaba of the princess Idut at Saqqara. 6th dynasty. Photo courtesy Patrick F. Houlihan. 439
16.5 A scene from the mastaba of Ptahhotep II, Saqqara, showing two groups of fowlers trapping waterfowl with clapnets in the swamplands and using a tame heron as a decoy to attract them. The "lookout" man signals to his companions that the nets are filled and to heave on the draw ropes by standing up and spreading a strip of cloth across the back of his shoulders. 5th dynasty. Photo courtesy Patrick F. Houlihan. 455

LIST OF TABLES

Chapter One
1.1 Indigenous Mammalian Fauna of the Post-Glacial Near East. 48–58
1.2 Recorded Avian Fauna of the Post-Glacial Near East Distribution Data from 1950s–1990s. 59–75

Chapter Twelve
12.1 Animals and Their Principle Divine Associations and Identification. 337

Chapter Sixteen
16.1 Predynastic and Dynastic Chronology of Ancient Egypt. 428
16.2 Piscine Taxa Recovered from Prehistoric Sites in Egypt. 432
16.3 Identifed Domestic Elements from Five Well-Published Sites. 442

Chapter Seventeen
17.1 The Distribution of Economically Significant Mammalian Species in PPNB Sites. 475
17.2 The Distribution of Economically Significant Species in PPNC and PN sites. 476
17.3 The Distribution of Economically Significant Mammalian Species in Chalcolithic Samples. 477–78
17.4 The Distribution of Economically Significant Mammalian Species in Early Bronze Age Samples. 479–80
17.5 The Distribution of Economically Significant Mammalian Species in Middle Bronze Age Samples. 481–82
17.6 The Distribution of Economically Significant Mammalian Species in Late Bronze Age Samples. 483
17.7 The Distribution of Economically Significant Mammalian Species in Early Iron Age Samples. 484–86
17.8 The Distribution of Economically Significant Mammalian Species in Late Iron Age Samples. 487–88
17.9 Distribution of Economically Significant Mammalian Species in Persian Samples. 489

17.10 The Distribution of Economically Significant Mammalian Species in Hellenistic Samples. 490
17.11 The Distribution of Economically Significant Mammalian Species in Roman Samples. 491

INTRODUCTION

Despite its title, this volume is not so much a history of the animal world in the ancient Near East as it is a narrative of human relations with animals told from the human perspective. After all, as Alan Bleakley, in the introduction to his book—*The Animalizing Imagination*—points out, it is only through the mediation of language and culture that we can know the animal world. Conceived as a resource for understanding animals as signifiers in the ancient Near East—in Bleakley's words, for understanding what they represent rather than what they present (as physical reality)—it reconstructs ancient attitudes towards animals, attitudes that have shaped our Western perception, and where they are still recognizable today.

The nature of the human-animal relationship in the ancient Near East is complex. But understanding that relationship can reveal how the peoples of the ancient Near East saw themselves and their place in the universe. Bleakley (2000: 38–40) speaks of animals appearing in three realms of experience, the biological (literal), the psychological (imaginal), and the conceptual (semiotic, symbolic and textual). The first of these relates to natural or real animals, the second to animals experienced in the personal and cultural psyche or imagination, and the third to animals used as signs in language (e.g., through simile and metaphor) or symbols in a system or code. "Biological" animals in the ancient Near East have been the subject of numerous zooarchaeological and material culture studies in recent years. But the manner in which the peoples of the ancient Near East used animals to animate their language, mirror their world, and ultimately define themselves, is a subject that scholarship has for the most part overlooked. Because animals of the mind and imagination are as critical to humanity's spiritual well-being as the herding of livestock is to its material well-being, it is this "*un*natural" role of animals in the lives of the inhabitants of the ancient Near East, that is, the embedding of animals as images in art, literature and the imagination, that forms the main focus of this work.

Perhaps the best-known ancient Near Eastern text relating to animals, the Flood Story in Genesis, will serve as a point of departure for understanding ancient Near Eastern attitudes. When, according

to the priestly account, Noah loaded his ark with animals, he took along a male and female pair of every animal, bird, and creeping thing, so that their species might live (Gen 6:19–20). But in the Yahwistic account, Noah is told only to take seven pairs from among the *clean* animals and birds, and only two pairs from among the unclean animals, "to keep their kind alive on the face of all the earth" (Gen 7:2–3). While in the priestly account the author would seem to value, and therefore preserve, the animals for their own sake, in the second version the criterion of selection gives preference to animals having relevance for humans, i.e., those that are edible, as defined in Leviticus 11 (cf. Deut 14). These differing traditions reflect the bivalence of ancient Near Eastern attitudes generally. A decided respect, even reverence, for the natural world is evident here and there, and images of mythical animalian paradises permeate Near Eastern literature. But humanity is also at war with the beasts. The manmade parks that echoed these mythical paradises were the source of game for recreational hunting. Animals were something to control and, if not controlled, then to destroy.

The newly civilized world was quickly divided between those creatures that dwelt within the human sphere and those that existed outside of it. Humanity's sovereignty over the animal world was reinforced in criminal trials of accused animals (for the ancient Near Eastern evidence see Finkelstein 1981). At the same time, the presence of humanized animals and animalized humans in art, literature and religion merged the two worlds in a repeated violation of this ideological distinction. The human need to personify animals, and thereby render them comprehensible, is readily evident in the ancient Near East. Similarly, humans often take on animal characteristics. Enkidu, for example, is the prototypical animalized human in the literature. But humanity's animality is most apparent in ritual, where the animal provides a bridge to the divine world. The assumption of animal guises, whether through costume, behavior, or both, to invoke that animal's symbolic—rather than its biological—presentation raises the specters of shamanism and totemism.

When naturally occurring animals were inadequate to express a concept or evoke an emotional response, it was necessary to invent ones that could. Fantastic creatures blended human and animal elements in a terrifying manifestation of the uncontrolled "other." They existed in the dream world, inhabited the dark recesses of the underworld, or, like the Scorpion-people in the story of Gilgamesh,

hovered at the edges of civilization. Some lurked unseen among humanity, their hostile powers checked by magical prophylactics, while others were beneficent, applying their unnatural powers to the protection of the weak. A perversion of both humanity and animality, these ancient monsters provided a psychological outlet.

Whether biological, psychological or conceptual, animals provide humanity with its greatest means of self-expression and self-reflection. Thus, this volume sets out to illuminate ancient Near Eastern attitudes and perceptions as they are attested in the iconography, literature, and religion of the peoples of the ancient Near East. These fields of study are scarcely separable from one another in the ancient Near East, but as modes of expression they allow us to view the apparatuses by which animals entered (and exited) the lives of those peoples we study.

Part One, on the native fauna of the Near East, sets the stage for what follows. Gilbert places the animals in their natural climatological, geographical, and behavioral settings. His tables listing the native fauna should be the starting point for any investigation into the identification of animals in the textual or artistic sources. The chapters on art in Part Two evaluate the iconography of animals with respect to form and function. The glyptic, reliefs, amulets, animal-shaped vessels, and other animal figures are examined to reveal what the art tells us about human, and specifically, the artists', attitudes towards the animals depicted. What was the artist attempting to show in his rendering of animals? As far as possible, the contributors discuss the many valences of symbolic meaning behind the representation of animals in art. Part Three is devoted to the representation of animals in written sources, focusing on their manipulation in literary imagery to carry symbolic messages or evoke particular responses, and on animals in myths, tales and proverbs, with their paradigms for human conduct. Part Four deals with the complex role of animals in religion, including religious symbolism and blood sacrifice, magical rites and incantations, and the animalization of humans in ritual performances. This section focuses as well on the relationship of animals with the divine realm. Finally, Part Five offers two studies on the cultural and material uses of animals. These contributions demonstrate, among other things, the extent to which faunal remains map the human culinary process.

Space does not permit me to name all those who have assisted in bringing this book to fruition. However I would like to mention two

individuals. Patricia Radder of E. J. Brill has shown extreme patience and understanding during the production process. And Richard Beal of The Oriental Institute of the University of Chicago has been a source of unflagging assistance in bibliographic matters.

PART I

THE NATIVE FAUNA

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CHAPTER ONE

THE NATIVE FAUNA OF THE ANCIENT NEAR EAST

ALLAN S. GILBERT

The emergence of complex, urbanized society was one of the most dramatic achievements in the rise of the human species. The earliest glimmers of civilized life appeared in the Near East as small foraging bands dependent upon the providence of nature at the close of the Ice Age grew over the ensuing millennia into teeming population centers that could reshape the environment and harness its energy. Plants and animals of the region played important supporting roles in this drama. Initially, they were the source of food and useful materials for hunter-gatherers of the late Paleolithic, but during the subsequent Neolithic transformation, a few species assumed a more prominent part and, in yielding to the domestication process, became living artifacts: the first organisms intentionally molded to the needs of humanity. Very likely, prehistoric mythology and ritual behavior were nurtured by the lore of floral and faunal procurement, and when writing finally kindled the light of history, images and attributes of plants and animals sprung up in texts and representational art, symbolizing the processes of nature as well as the supernatural agents presumed responsible for creation, destruction, and renewal.

The close relationship that ancient Near Eastern cultures shared with the animal world is the subject of this volume. The present overview chapter introduces the cast of creatures that witnessed the rise of the world's earliest civilizations and that, in many ways, influenced their development.

THE SETTING

The Near East lies at the southwestern corner of Asia. Its geographic center is the Tigris-Euphrates River valley of Mesopotamia, and surrounding this core are the lands of the Arabian peninsula, Egypt,

the Levant, Turkey, Iran, and Afghanistan. Moving continents have created an especially varied topography throughout the region, tilting, buckling, and splitting the earth's crust. Snaking across the map from northwest to southeast are the ripples and broken folds of the Zagros-Taurus mountain arc, its sinuous spine thrust skyward by compressive crumpling of Africa and Arabia against Eurasia (Oberlander 1965; Delaney and Gupta 1981). In contrast, the huge East African Rift System cleaves ever northward along the axis of the Red Sea and Jordan River valley, slowly tearing the Near East apart and producing within its gradually widening trough the world's lowest point on dry land (-395 m/–1,296 ft) at the shores of the Dead Sea (Horowitz 1979). Between this elevation and the highest, atop Mt. Demavend in Iran's Elburz Mountains (5,601 m/18,377 ft), lies a diverse mosaic of flat plains, rolling hills, high plateaus, and mountain ranges with steep, craggy ridges and snow caps. Numerous rivers, spawned from the confluence of mountain streams, meander through the flatlands west of the Zagros, laying down a network of floodplains, some of which have supported dense gallery forests. Along the margins of several river valleys, and in a few deltaic localities—notably Egypt and southern Mesopotamia—marshes predominate.

Since the close of the Pleistocene, the Near Eastern landscape has changed, markedly in some places. Fed by the melting of the great ice sheets, the gradually rising seas inundated vast tracts of previously exposed coastal plain, forcing a retreat of all biota inland of the present sea stand, which was reached by about 4000 B.C. The Black Sea attained its current size and salinity abruptly after ca. 5600 B.C. when Mediterranean seawater broke over the threshold of the Bosporus, obliterating a smaller freshwater lake that had previously filled the Pontic depression (Ryan *et al.* 1997). Intensified land use by humans beginning after 2000 B.C. initiated region-wide cycles of erosion and general denudation that have accelerated in severity over the succeeding four millennia. As a consequence, alluvial fill has accumulated within valleys and plains, raising ground level appreciably, while silt-laden rivers have deposited their burden at the mouths of rivers and streams, landlocking ancient harbors and permanently transforming the coastal geography of most estuaries.

The climate of the Near East is determined by its position within the dry subtropical latitudes. North of 30° N. lat., atmospheric flow is westerly, and winds from the Mediterranean Sea introduce most of the

moisture that falls between September and April. Rainfall is greatest along the Levantine coast, diminishes eastward, but spurts again as air currents rise up against the massive Zagros ridge. Within the mountains and high plateaus of Turkey and Iran, winters can be severe. Eurasian high pressure propels polar air southward into these areas, producing very cold conditions and heavy snowfall in the higher elevations. Treeless, alpine plant communities cling to the tallest mountain peaks, but the inhabited plains, hills, and lower ranges support dry forest and open woodland in the moister localities, scrubby or grassy steppe in the drier lowlands, and desert-adapted (xerophytic) associations in rain shadows or sectors beyond the reach of the wet Mediterranean winds (van Zeist and Bottema 1991). Complete drought affects nearly the entire region throughout the summer, making aridity a serious challenge to the survival of many plants and animals.

The southern parts of the Near East are largely desert, with precipitation averaging less than 150 mm (6 in) annually. Evaporation greatly surpasses rainfall, leaving the ground exceedingly dry and unable to support extensive vegetation. The generally poor plant cover offers little stability to the soil, so that wind and runoff—often in the form of flash floods—wear away the landscape. Intense insolation during the daytime loads the land surface with more heat than the meager soils with their limited ground water can absorb. At night, this heat is lost to cloudless skies through radiational cooling, which sometimes sinks the mercury to near or below freezing. Such wide temperature oscillations inflict heavy mechanical stresses on exposed rocky surfaces, producing further attrition through flaking and fracturing.

South of 30° N. lat., easterly trade winds bring monsoon conditions to eastern Africa. Rains fall during the hot season, from May to July, as low pressure over the continent draws moisture inland off the ocean. Nile flooding is a direct result of monsoonal drainage, and in antiquity, the river rose punctually during the immediately succeeding months of August to October. In Egypt, precipitation is extremely limited, leaving the Nile itself as the unique conduit for water and, prior to Aswan dam construction, fertile silt to sustain the valley's agricultural economy (Butzer 1976; 1995).

The foremost environmental constraint affecting biotic adaptation in the Near East has long been aridity and its associated conditions. Plants have developed two strategies to survive the dryness (Danin 1983). Drought "evaders," such as grasses and other annuals, grow during the mild, rainy winters and die at the start of summer. The seeds they leave

behind remain dormant through the hot months and germinate only when rains return in the fall to begin another life cycle. Drought "resisters," including all perennials, employ numerous devices to endure the damaging effects of the desert. Some species possess long taproots that penetrate many meters into the ground to provide a continuous supply of water, while others seal their hard won moisture within using waxy (glabrous) coatings. To reduce evapotranspiration, some shed their leaves during the dry periods, shifting metabolic functions to their stems (stem assimilants). Yet others close down their stomata, opening them only at night, well after the elevated temperatures of daytime have subsided (typical of species using the photosynthetic pathway known as CAM, or Crassulacean Acid Metabolism). The exposed surfaces of many plants are insulated with light-colored hairs (tomentum), which reflect solar radiation to prevent heat buildup while simultaneously creating a boundary layer of moist air to slow water loss. Plants that occupy saline soils (halophytes) absorb salt in order to retain an osmotic balance favorable to continued water intake.

Many Near Eastern plant communities have also become fire-adapted (pyrophytic) to survive periodic burnings. Low moisture regimes bring to a virtual halt the processes of decay in dead vegetation and eventually produce in certain localities dense, impenetrable thickets that impede new growth. Natural fires reduce this senescent overgrowth, releasing back into the soil nutrient-rich ash that feeds a new generation of fire-resistant species.

Animals have also evolved avoidance and resistance strategies to mitigate the harshness of the Near Eastern climate (Schmidt-Nielsen 1979). For mammals of medium to large size, evaporation of water from skin and exhaled breath is the principal means of binding and eliminating body heat. Ungulates and most carnivores, for example, are large enough to sustain moisture loss during the cooling process without reducing internal water to dangerous levels. Most small animals cannot afford similar evaporation rates, however. The heat load on them is higher due to their closeness to the overheated land surface and their greater ratio of surface area to body mass. Efficient cooling through rapid water loss would eliminate too much of their more limited body moisture and would quickly lead to explosive heat rise and death. With no prospect of easily replenishing lost water, such creatures have become nocturnal, restricting their activity to nighttime or the crepuscular hours of dawn and dusk, while escaping the heat of the day in burrows or various natural shelters.

Most desert species conserve water by excreting very dry feces and highly concentrated urine. Some, to be described later, are anatomically or physiologically specialized to survive the intense heat and aridity. Many invertebrates enter summer dormancy—or estivation—to wait out the life-threatening conditions. Insects of the arid zone appear to be extraordinarily resistant to the heat. Very little water escapes through their exoskeleton and tiny breathing tubes, yet some species tolerate ground and air temperatures above 40° C. (104° F.) that would impose severe heat-related stresses on other creatures.

THE STUDY OF NEAR EASTERN FAUNA

Environmental diversity and interspecies competition generally determine how animals are distributed across the landscape, but within the Near East, territorial dispersal is also a result of the contact and partial overlap of two major faunistic zones: the temperate Palearctic region of Eurasia and the hot, dry Ethiopian region, which comprises Africa and southern Arabia. Climatic oscillations over millions of years have enabled Palearctic species to migrate southward during humid intervals, while ebb tides of tropical Ethiopean forms have advanced northward out of the deserts with the swing back to drier conditions. Some populations have responded to the climate changes with rapid adaptation, transforming themselves in step with the shifting habitats. For example, several species have exhibited a gradual size reduction in the early post-glacial millennia, probably in response to rising temperature (Dayan *et al.* 1991; Ducos and Horwitz 1998). There has been no evidence for major extinctions, however. Most species that disappeared from the Near East still survive in other parts of Asia or Africa. Their local demise is largely the result of human-induced habitat destruction, initially with the rise of farming and continuing with the growth of cities and the expansion of pastoralism. For some, the mechanization of hunting in recent times delivered the final, disastrous blow.

Though they offer the most detailed information about species distribution, modern faunal surveys describe living animal populations whose character reflects their long-term adjustment to the cumulative effects of environmental variability and cultural impacts. Data from the present, therefore, do not necessarily give an accurate picture of ancient conditions. Ecological requirements of wild species can provide clues about their potential range in former times, but dispersal

patterns must be confirmed using harder evidence. While ancient written sources and artistic representations frequently provide valuable details about the physical appearance of animals, the uses to which they were put by humans, and sometimes their zoogeographic spread, the most reliable information comes from skeletal debris buried within the layers of archaeological sites.

Archaeozoology is the study of faunal remains from the past. Though it contributes valuable information that can directly reflect the nature of ancient human-animal interaction, its usefulness is also limited for several reasons. Most archaeological sites yield evidence of the most commonly exploited animals, so that creatures subject to cultural avoidance or accorded low food value rarely, if ever, turn up in excavated sediments. The range of commonly recovered species usually proves to be quite narrow compared to the full zoological spectrum that once inhabited surrounding territories. Other cultural factors may determine which bones will be discarded within the site and which will be consigned to oblivion on its outskirts or destroyed in other ways through subsequent uses. A further difficulty is that the remains of many species, especially birds and fishes, are absent or underrepresented because they are too light and fragile to survive diagenesis—that is, the physical and chemical changes imposed by long-term burial. Thus, the habitual collection and disposal behaviors of ancient humans compounded by diagenetic effects will inevitably winnow the faunal assemblage down in terms of represented species and skeletal part frequencies. Recovered bones often reveal more about the cultural preferences of humans and the relative durability of the remains than they do about the original nature of the animal world at the time.

Species not procured for food are occasionally unearthed, however, and their discovery can provide useful information about the environment. Bones of commensal mammals—those adapted to life within human settlements—are sometimes left within ancient sites by the predatory activities of domestic carnivores, such as dogs and cats, or wild ones, such as owls (Tchernov 1991). Humans often adorn themselves with parts of animals, a familiar example being shell beads (Reese 1991; Bar-Yosef Mayer 1997). Mortuary customs often bequeath to the deceased not only functional and decorative articles for the afterlife, but pets or service animals as well, interred as companions in death (Tchernov and Valla 1997). Ritual burial was taken to extremes in late period Egypt when various species (especially cats, cattle, birds, and crocodiles) were killed, mummified, and entombed by the thousands

during lavish manifestations of animal worship (Gaillard and Daressy 1905; Lortet 1905). The cemetery context, as well as many other deposits, can also contain faunal remains on a far smaller scale, including ancient decomposing organisms represented by their hard parts (Buckland 1976). Parasitic infestations have also been diagnosed in well-preserved tissues, such as in the discovery of the calcified eggs of the bilharzia platyhelminth (*Schistosoma haematobium*), as well as other infectious agents within the embalmed and desiccated bodies of the Egyptians themselves (Cockburn *et al.* 1998; cf. Greenblatt 1998).

New techniques that may have far-reaching implications for future archaeozoological studies include the analysis of residual proteins and DNA from bone, blood residues, or other intact organic matter. Despite its weathered state after millennia of burial, such biomolecular evidence offers a fresh analytical dimension permitting further insights into the phylogenetic relationships of wild species, geographic variants, and domestic breeds, as well as distribution and molecular change over time.

An exhaustive survey of Near Eastern animals would be impossible in a short chapter, and therefore the present contribution builds upon an earlier review (Gilbert 1995) by presenting zoological data on a limited number of mostly mammalian species selected for their intimate connections with human hunting and husbandry, their prominence in modern conservation efforts, their familiarity, or simply their unique adaptations. The discussion continues with a brief consideration of the highly diverse bird life, including data on a number of species culled from the vast ornithological literature of the Near East.

Accompanying lists of post-glacial mammal (Table 1.1) and bird (Table 1.2) taxa are compiled from recent sources and are based on verified field observations. Debated classifications aside, the scientific names have been updated to reflect present taxonomic understanding, and thus they may differ from those listed in the original sources. In addition to scientific names, the tables display one of perhaps several vernacular names, brief descriptive details about habitat or geographic range, and current conservation status according to (a) the Red List of Endangered Species published by the International Union for Conservation of Nature (IUCN) and (b) the Appendices on commercial restrictions published by the Convention on International Trade in Endangered Species (CITES).

A separate, extensive, yet still selective bibliography on Near Eastern fauna is also provided in the Appendix. The bibliography does not

emphasize the archaeozoological literature, but instead focuses on studies of living populations, featuring especially treatises on taxonomy and identification, animal distribution, and ethology, including sources written by Near Eastern researchers in their native languages. Within the limits of publication space, the scope of the bibliography has been widened to encompass adjacent regions that sometimes contribute exotic species to the Near Eastern periphery, and it also contains works on several arcane creatures that might be of interest to historians and archaeologists pursuing more esoteric inquiries.

MAMMALS

The most familiar animals of the ancient Near East are the domesticated mammals, upon which a large part of the economy depended for food, raw materials, service, and the storage of wealth. Consideration of the indigenous mammalian fauna will therefore begin with the wild progenitors of the earliest domesticates, nearly all of them ungulates, with generally briefer mention of related species that were not brought under human control. Table 1.1 contains a complete listing of all known post-glacial mammals inhabiting the Near East based upon modern zoological surveys. Modifications have been made to reflect details yielded by archaeological finds.

On present evidence, wild sheep (genus *Ovis*) and goats (genus *Capra*) became the earliest domesticated food animals during the Paleolithic to Neolithic transition (9000–7000 B.C.). Like nearly all other native Near Eastern ungulates, they are now much reduced in number and inhabit remote refuges within their former range. By the strictest definition, all sheep belong to a single species since captive individuals regardless of their origins produce fertile offspring. Likewise, all goats are fully interfertile as well. In the wild, however, discrete populations have formed that do not interbreed. Geographic separation has probably been the principal isolating factor, but in areas where group ranges overlap, anatomical or behavioral divergences may continue to inhibit hybridization. In view of such natural patterns of separation, taxonomic categories used by most zoologists have tended to reflect these mating discontinuities.

Sheep and goats are gregarious ruminants with life cycles similar to other wild ungulates (Schaller 1977). Throughout much of the year, nursery herds of females and young remain mostly independent of all-

male bachelor herds, and only in late summer or autumn do the sexes congregate for mating. During the rut, males compete for breeding access, the largest and strongest intimidating others into retreat through a series of displays that include pushing, chasing, displacement, lunges, or body butts. Males more evenly matched in size may engage in outright horn clashes, and these synchronized collisions are repeated until one of the combatants withdraws. The horns—bony extensions of the cranium with an outer keratinized sheath—are permanent and nonrenewable. They grow in annual increments throughout the life of the animal and can reach impressive dimensions in older males. Those carrying the largest horns have been the principal target of modern game hunters, who stalk their prey almost exclusively for these trophy specimens. Females carry small, slender horns and sometimes grow to only half the size of males. Gestation periods of 150 to 160 days culminate in a birthing season timed to the warming months of February to May when herds follow the rich summer graze as it spreads up into montane meadows.

Together with cattle, deer, antelopes, and camels, sheep and goats are ruminants, which means that they process coarse, hard-to-digest vegetation by repeated mastication and fermentation within a multichambered stomach. Chewed food is swallowed into the first stomach, or rumen, where cellulose, the most durable component of a plant diet, is broken down by microbes. Nutrients released by the action of microbial enzymes are mainly short-chain fatty acids, which are the principal source of energy used by herbivores. These molecules are absorbed through the rumen wall, while the gaseous methane and carbon dioxide byproducts are periodically expelled through the esophagus by belching (eructation). Larger food particles are further ground down by regurgitating a portion (a bolus) of the rumen contents, remasticating this cud to comminute the plant fibers, and reswallowing it into the second chamber, or reticulum, for continued fermentation. Water is extracted from the ingesta in the third chamber, or omasum, and ordinary digestion is carried on in the fourth chamber, or abomasum, as well as the small intestine. Nursing lambs and kids take milk directly into the abomasum through a detour groove that forms in the esophagus. For neonates, rumination is unnecessary until the roughage of solid foods is eaten, but it is also impossible in a young gut as yet uncolonized by the appropriate microorganisms. It is speculated that rumination evolved to permit herbivores to eat and run, thereby escap-

ing predation at favored feeding locations. In this way, internal nutrient processing can be postponed for more secure times out of range of stalking carnivores.

Sheep frequent varied habitats that are dry and unobstructed by tall vegetation (Valdez 1982). Open terrain provides advance warning of predators, and the evolution of long legs (in the sheep of western Eurasia) affords the speed necessary to escape danger. The Near East is presently home to medium-sized forms, or mouflons, that range from Europe to western Iran, as well as larger varieties, termed urials, that occupy the Caspian region, Central Asia, northeastern Iran, and Pakistan. Mouflons bear the same chromosome number (2n = 54) as modern domestic sheep (*O. aries*), while urials differ (2n = 58). Across central Iran, however, transitional populations with intermediate chromosome counts (such as the Elburz Mountain mouflons) suggest that some mouflon × urial interbreeding has occurred in the past. Though different scientific names have been proposed, and vernacular ones loosely applied, both mouflons and urials in the wild have commonly been classified within a single species (*Ovis orientalis*). Some zoologists prefer to designate the mouflons as *Ovis gmelini* and the urials as *Ovis vignei* (e.g. Hadjisterkotis 1997).

Archaeological evidence suggests that the earliest domestic sheep probably emerged from the mouflon of Anatolia and northern Iraq/Iran, territory currently inhabited by the Armenian subspecies (*Ovis o. gmelini*). If the ancestral progenitor stock resembled the Armenian mouflon of today, then male pelage probably varied from dark brown in the more humid west to a reddish buff within the more arid locations, and its white face, undersides, lower legs, and distinctive saddle patch were offset by a black throat ruff. In females, pelage would have been more subdued. Winters brought out an undercoat of fine, insulating wool, which molted in spring leaving only a thin covering of outer hairs during the warm season. Horn shapes likely varied, probably much as they do today, with the principal configurations being a heteronym (medial) twist with tips converging toward the neck or back, and a homonym (lateral) twist producing a graceful arc about the ears. Modern Armenian mouflons display heteronym supracervical horns, while the Transcaspian urial (*O. o. arkal*) carries the familiar homonymous loops.

Goats prefer high, precipitous terrain where predators can be evaded by sure-footed escape along precarious ledges and rocky inclines (Valdez 1985). Callosities form on the carpals and sometimes on the chest, apparently to protect against abrasion while clambering up rough slopes.

Like sheep, goats forage in grassy pastures as a first choice but will diversify their feeding to include browsing on leafy vegetation, often deftly climbing into trees to reach the greenery on upper branches. The presumed ancestor of domestic stock (*Capra hircus*) is the scimitar-horned mountain goat (*C. aegagrus*) that ranges from Turkey to Pakistan, and once included an extension southward into the Levant. In the Near East, the mountain goat is also called the bezoar, a term referring to the mineralized concretions, or enteroliths, that develop in its stomach chambers and which were formerly valued for supposed medicinal powers. Bezoar males are brownish-gray or silvery in winter coat, grading toward reddish-brown in summer. Face and characteristic beard are black, while the undersides are white. Outlining the body are dark bands that emerge from a large brownish-black breast patch, boldly encircle the shoulders, merge at the nape, run down the back, and grade into the tail.

Ibexes (*Capra ibex*) are closely related to bezoars, but notwithstanding some territorial overlap, the two species have not hybridized. Though both possess crescentic, or falciform, horns, the bezoar's sharp anterior keel is replaced in the ibex by a blunt edge with prominent transverse ridges marking successive growth periods. The Nubian subspecies of ibex (*C. i. nubiana*) occupies the arid ranges of the southern Levant, the Arabian peninsula, and Africa east of the Nile, while the Asiatic variety (*C. i. sibirica*) extends from Afghanistan eastward into Mongolia.

Other members of the caprine subfamily include two turs: the West Caucasian, or Kuban, tur (*Capra caucasica*) and the East Caucasian, or Dagestan, tur (*C. cylindricornis*), and the screw-horned markhor (*C. falconeri*), which inhabits Afghanistan and the western Himalayas. Ranging over much of mountainous southern Europe, Anatolia, and the Caucasus is the small, hook-horned chamois (*Rupicapra rupicapra*). Aoudads (*Ammotragus lervia*) occupy much of northern Africa, and though they are anatomically closer to goats, biochemical similarity to sheep provides partial justification for their vernacular label, Barbary sheep. Another caprine relative is the Arabian tahr (*Hemitragus jayakari*), which is found only in the coastal ranges of Oman. Perhaps the rarest of goats is the Walia ibex (*C. ibex walie*), of which only several hundred still exist within the Simen Mountain preserves of north central Ethiopia (Nievergelt 1981). Like most other wild ungulates, all the caprines are pressured by competition from pastoral herds, and their flight response toward precipitous terrain saves them from natural predators but not from the high-powered guns of humans. Fortunately, most surviving

populations are protected by law within wildlife refuges, and hunting seasons have been established for only a few species (Shackleton 1997).

Pigs (*Sus scrofa*) may also have come under domestication in the early Neolithic. Wild boar herds, or sounders, can still be found over much of their former range in the temperate and subtropical parts of Eurasia, but though they are normally active during daylight, they have become increasingly nocturnal to reduce competition in the face of rising human encroachment. Pigs are unusual among ungulates, as their omnivorous diet allows them a wide choice of habitats. They still prefer to remain near dense vegetation for the cover it provides, and they also seek out wallowing places in wet ground to find relief from insects or hot weather. Pigs build nests for resting and farrowing by rooting out a hollow in the earth and upholstering it with grass and brush. After a relatively short gestation of 120–140 days, sows give birth to sizable litters (often four to eight), and the piglets nurse from their own teat, one of six pairs, which they defend as personal territory.

In appearance, wild boars are gray to dark brown or black, and stiff bristles cover a compact body with almost no neck. Continuously growing canines emerge from each quadrant of the mouth. The upper tusks are largely for display, but the short, sharp, lower ones function as slashing weapons that can inflict serious, and sometimes deadly, wounds when rival males square off in their typical style of lateral fighting. With mouth open, a boar uncovers his ivory stilettos and wields them against an opponent's flank with a sideways lunge and upward jerk of the head. These savage displays have made boars extremely dangerous prey for hunters. Their reputation for ferocity is embodied in a number of classical myths, including that of the great Kalydonian boar killed by Meleager and Atalanta, as well as the beast of Erymanthus captured by Hercules in the fourth of his labors.

Bone finds suggest that a close relative of the pig, the hippopotamus (*Hippopotamus amphibius*), inhabited coastal areas of the southern Levant until at least the Iron Age, and historical accounts document its existence along the Egyptian Nile prior to the eighteenth century. Currently, none survive north of Khartoum. Hippopotami spend much of their time submerged in lakes and rivers, breathing through closeable nostrils located high on the snout so that they often become the only part of the animal that breaks the water's surface. Body pores exude an oily pinkish substance called "blood sweat" that protects the skin during long periods underwater or during nightly excursions on land, where they emerge to graze. Dung, frequently evacuated in the water, pro-

vides a rich food source for many fishes, which symbiotically clean the hippopotami of exterior parasites, algal growths, or vegetal residues lodged between the teeth. Hippopotami have been hunted for flesh, hide, and ivory, and like their suid cousins, the pigs, they are irascible and highly aggressive when disturbed. In the Nile basin, hippos have accounted for more injury and death to humans than have crocodiles.

A pygmy hippopotamus (*Phanourios minutus*) is known to have inhabited Cyprus at the time of the island's initial colonization, but it died out quickly due either to habitat changes or overhunting. The best evidence of its exploitation by humans was uncovered at the unique early Neolithic site of Aetokremnos, near Akrotiri (Simmons *et al.* 1999). Dwarfism has occurred to a number of large species breeding in isolation on small islands (Sondaar 1977).

Wild cattle no longer exist. The extinct aurochs (*Bos primigenius*), the likely source of all modern domestic cattle (*B. taurus*), once roamed open forests and grasslands from Europe and northern Africa to eastern Asia. The last captive one died in a Polish game park in 1627. Historical records indicate that bulls were exceptionally large with horns curving outward, then forward. In Europe, coat color was black with a light dorsal stripe, and the smaller cows were brownish to reddish, but Near Eastern cattle may have displayed more muted coloration. The behavior of other bovine species suggests that wild cattle may have lived in single male herds, with a bull's mating monopoly over his cows lasting until a competing male ousted the incumbent through fierce challenge bouts.

Attempts were made in the Munich and Berlin zoos during the early twentieth century to breed back the known characteristics of the aurochs. These experiments yielded several dozen "reconstituted" individuals that not only expressed the familiar anatomical attributes but also reproduced the shy and temperamental disposition that had been typical of the ancestral stock (Heck 1951). Humped zebu cattle of southern Asia (sometimes termed *B. indicus*) represent a tropical domestic form valued for its resistance to heat and pests.

Other Near Eastern bovines include the bison or wisent (*Bison bison caucasicus*), which lived in the hills and grassy valleys of Turkey, the Caucasus, and northern Iran. The water buffalo (*Bubalus arnee*) is better known from regions to the east—the Indus Valley, northern India, and Southeast Asia—but it is still unclear where and when domestication first occurred. Today, the buffalo is used extensively in tropical wetland agriculture, and though it may have been native to rivers and marshes

of Mesopotamia, there is also the possibility that it was introduced into the Near East as the domesticated *B. bubalis*. The rarity of archaeological bone finds from both bison and water buffalo may be due at least in part to the difficulty of distinguishing them from those of cattle.

Equids comprise horses, asses, and zebras. Though they do not interbreed in nature, they will all do so in captivity, yielding except in rare instances sterile hybrids. Too much evolutionary divergence has occurred between species for such crosses to produce fertile offspring. Equids are odd-toed ungulates whose elevation onto a single hoofed digit is an adaptation for speed in escaping predators. Dental evolution has produced long-crowned, short-rooted molars (hypsodont), toughened for heavy grinding by complex folding of the hard outer enamel into the softer inner dentin, with the exterior grooves filled by cementum. The teeth emerge continuously throughout life to offset the gradual wearing down of the occlusal surfaces against an abrasive diet of savanna and steppe grasses. The equine head is long so that while the animal is grazing, the eyes, set behind the deeply embedded upper molars, remain at a sufficient height above ground to survey the horizon for danger. Equids do not ruminate. Instead, ingested food rapidly undergoes simple digestion in their single stomach and small intestine, after which it enters a voluminous caecum and colon where a very efficient fermentation takes place with no appreciable production of gases. Four equid species, including at least eight subspecies, once lived in the Near East (Clutton-Brock 1992; Groves 1974). Only a few of these still survive in the wild, while some are gone forever.

Horses may have been present in the Near East during the late Pleistocene, but by the close of the Ice Age, their distribution was restricted to the steppes of Eurasia. Two subspecies were known in historic times. Przewalski's horse (*Equus ferus przewalskii*) was discovered in 1876 by the Russian explorer N. M. Przewalski in the region of the circum-Gobi and western China. Herds of Przewalski's horse are currently preserved in game parks, and an effort to reintroduce them into Mongolia is ongoing (FAO/UNEP 1986), but they may have had no connection with the ancient Near East. The tarpan (*E. f. ferus*) was familiar to much of western Eurasia as the wild horse of eastern Europe and south Russia, its name borrowed from the Turkoman for "wild horse." The tarpan is effectively extinct, as the final specimen expired in the Ukraine in 1918. Forest and steppe varieties existed, but the close resemblance of the modern Polish konik pony to the forest form implies some genetic continuity into present-day domestic stock. Tarpans were stocky, short-

headed, and, like all wild equids, they carried an erect black mane. Pelage was mousy gray in color (tan or yellowish in some steppe populations), and in the north, it whitened markedly during winter with the growth of a woolly undercoat that molted in spring. As is typical of horses, the tail was hairy for nearly its entire length. Tarpans migrated with the changing seasons in large herds composed of family bands, each led by a single male. The dominant stallions established their families by abducting mares, assembling a breeding harem, and defending it from intruding subordinate males, who kept to the herd margins and remained non-players in the mating game until they, too, had acquired females. It was perhaps ancestral tarpans living in the Pontic region that first came under human control by at least the fourth millennium B.C. Introduction of domestic horses (*E. caballus*) into the Near East followed subsequently.

The African ass (*Equus africanus*) inhabits some of the most arid and inhospitable areas on earth. Its sleek and graceful body with slender appendages and long ears evolved for efficient dissipation of the desert heat, and its hooves have narrowed to be effective in negotiating the rocky land surfaces of the Saharan regs and hammadas. Pelage is usually gray with undersides, muzzle, and legs of white. Triangular wedges of white also extend up the sides, separating the shoulder, flank, and hindquarters. The tail of asses (as well as zebras) differs from that of horses in that it is hairless for a variable length from the top. Two subspecies from northeastern Africa may be considered indigenous to the Near East. In the nineteenth century, Nubian asses (*E. africanus africanus*) occupied the eastern Sahara to the Red Sea coast, but it is doubtful that many wild populations survive today. Their coat took on a reddish hue in summer and revealed the same body markings seen in ancient Egyptian depictions of donkeys and hunted asses: a dark dorsal band crossed at the shoulder by lines that approach but do not reach the elbow. In antiquity, Nubian asses may have extended into western Asia, including parts of Palestine and Arabia, but it is still uncertain whether this subspecies alone gave rise to the earliest domestic donkeys (*E. asinus*), either in Egypt or western Asia, during the late fourth to early third millennia B.C. The Somali ass (*E. africanus somaliensis*) still inhabits the region between Africa's horn and the Eritrean coast. It is distinguished from the Nubian race to the north by a summer shift to yellowish buff coloration and distinctive dark stripes encircling the lower legs.

In ancient Greek, the Asian ass was referred to as ἡμίονος, literally "half-ass," and the term was eventually adopted to designate the spe-

cies (*Equus hemionus*). Oddly, hemiones are also commonly called onagers today, a term that originated from ὀνάγρος, or "wild ass," by which both Greeks and Romans referred to the African ass (Groves 1974). Four subspecies of Asian ass were distributed across the Near East: The Syrian achdari (*E. h. hemippus*), the Iranian ghor-khar (*E. h. onager*), the Turkmenian kulan (*E. h. kulan*), and the khur of the Thar desert in northwestern India (*E. h. khur*). Small groups of all but the Syrian achdari still occupy parts of their range, and host countries have made varied efforts at conservation in wildlife preserves. The extinct Syrian subspecies was the smallest of the hemiones, standing about one meter at the shoulder, but it disappeared in the early twentieth century. A narrow wedge of white separates the shoulder and flank in all extant subspecies, but the rest of the pelage varies through a range of earth tones—reddish-buff in the ghor-khar, yellowish-brown in the kulan, and olive gray in the achdari—with a dark stripe down the back contrasting with lighter undersides and buttocks. As the winter coat begins its molt in March–April, bares the summer coat by June–July, and then starts its gradual regrowth cycle in October–November, coloration varies nearly continuously over the course of a year.

Unlike horses, African and Asian asses are fiercely territorial in their social behavior. Dominant stallions claim personal domains, sometimes of great size, within which they maintain sole right to mate with as many mares as will pass through. Territories are held throughout the year but are not defended, and no effort is made to detain the females or form permanent familial bonds. Territorial stallions will, however, challenge any male intruder in the presence of a breeding mare. Bachelors tend not to pose such challenges but instead congregate within their own groups and remain peripheral to the reproductive process until individuals succeed in taking over a territory of their own. Territorial boundaries are marked with dung piles, which are visited and added to frequently.

The extinct hydruntine (*Equus hydruntinus*) was indigenous to southern Europe and the Levant, according to the distribution of its remains (Uerpmann 1987). Adapted to cold glacial conditions beginning as early as the Middle Pleistocene, this equid appears to have persisted to the end of the Ice Age (S. Davis 1980), but little is known of its habitat preferences, and virtually nothing of its behavior and overall appearance.

Exotic images of oases and desert caravans have made camels the most familiar of Near Eastern animals. Their remarkable ability to

withstand heat and aridity opened vast areas of barren wasteland to human travel and exploitation beginning on a large scale probably in the first millennium B.C. (Bulliet 1975; Wapnish 1981). The single genus of Old World camels contains two species. Dromedaries (*Camelus dromedarius*) are one-humped camels originally native to the torrid deserts of Arabia and North Africa and known today only in the domestic state. Bactrians (*C. bactrianus* or *ferus*) are two-humped camels that ranged from northern Iran, through Central Asia, and into western China (Gauthier-Pilters and Dagg 1981) and currently persist in the wild only in the Gobi. Both species lack the cloven hooves of their artiodactyl relatives but possess instead broad foot pads, each bearing two toes with nails, but in accordance with their more northerly distribution, bactrians display adaptations to a cold habitat in their darker coloration, shorter legs, stockier build, and growth of a shaggy winter coat that molts in the spring.

Camels are principally grazers, but they will forage widely, consuming whatever is available, even salty, halophytic brush and the thorny, anti-pastoral vegetation passed up by other herbivores. Rumination is achieved with a stomach consisting of three chambers. The humps of well-fed camels are usually full and firm, as they are simply mounds of stored fat lacking rigid internal structure. Energy production gradually metabolizes the fat, and without continued nourishment, the humps slowly decrease in size. Those of the dromedary shrink under an elastic skin covering, whereas those of the bactrian flop as if deflated.

The special tolerance of the camel—especially the dromedary—for the hostile desert environment is the product of several evolutionary modifications (Schmidt-Nielsen 1979). Wide and softly padded feet spread the animal's weight, facilitating passage over shifting sands, but when raging winds blow those sands into stinging, airborne pellets, camels can still see through closed, semi-translucent eyelids, while their nostrils narrow to tiny slits. To face the blinding glare of daylight, their eyes are shaded by heavy brows and thick, bushy lashes, while lubrication flows constantly through wide, non-clogging lacrimal ducts. The camel's most impressive achievement, however, is the extraordinary degree to which it can conserve internal water. In winter, the arid zone climate is mild, and drinking is usually unnecessary as sufficient moisture can be assimilated from pasturage, but in summer, camels must use sparingly what water they can obtain, commonly in long drinking sessions at isolated oases when the equivalent of 20% of body weight may be swallowed (up to 130 liters). Within two days, such water is fully

absorbed at the cellular level and must be preserved from excessive loss until the next drinking opportunity. The popular perception that camels can store water is untrue. No water is present in the camel that does not fulfill some physiological function, and hump fat cannot be called upon as a reserve since the water produced through its metabolic breakdown is insufficient to compensate for the loss of moisture through respiration that brings in the required oxygen to fuel the process.

Camels cannot therefore be said to store water, but they do store heat. A camel's skin contains small, deeply embedded sweat glands, yet sweating is minimized and water conserved by permitting body temperature to rise higher than most other species can endure. Morning lows of 34–35° C. (93–95° F.) can climb to as high as 39–40° C. (102–104° F.) in the hottest part of the day with no deleterious effect. In this way, camels delay the onset of sweating until body temperature is so elevated that heat flow from the environment into the already quite hot camel begins to decline. At this point, the amount of sweat required to maintain a stable body temperature is much reduced. During midday, camels will sit quiet and motionless, facing the sun in order to present the smallest profile to its direct rays, and stationary so that their body shades the underlying ground surface, keeping it cool. A further water conservation device in dromedaries is their retention of a woolly coat from season to season. The desert's low relative humidity allows sweat to evaporate quickly within the dead air space next to the skin's surface, and because the fur does not become wet, it forms an insulating barrier to heat penetration from outside. In addition, the kidneys of a camel are capable of concentrating impurities within a small volume of water, while the colon retrieves much of the moisture from the feces. When hard pressed, camels are able to lose up to 27% of their body weight in water while still maintaining a viable blood volume. This is a prodigious level of dehydration compared to humans, who cannot tolerate more than a 12% reduction. When at last the thermometer drops at nighttime, the camel quickly dissipates the day's heat buildup without having to sacrifice precious water to do so.

Free-ranging dromedaries tend to form male-dominated harems in which strong attachments develop between individuals of the group. Rutting competitions begin with threats, including salivating, bellowing, teeth grinding, standing with rear legs spread, urinating on the tail and flipping it against the back with a loud snap, rubbing the occipital glands against the shoulders to release a greasy and strong-smelling secretion, or inflating the *dulaa*, or skin bladder, a balloon-like bag aris-

ing from the soft palate that can be extruded from the mouth when filled with air from the trachea. Among equally matched males, such threats may escalate into violent confrontations that involve biting at the legs and flanks, checking in order to trip up the opponent, and asphyxiating the fallen combatant by lying on the neck. Females may copulate many times during the rut, and the gestation period of about four hundred days ends with generally single births, usually occurring between January and April.

Recently, a curious but apparently abortive attempt was made to domesticate the rock hyrax (*Procavia capensis*) in Yemen (Stevenson and Hesse 1990). In the late 1970s, economically depressed households began to keep captive hyraxes within crawlspace hutches built into their earthen houses. Hyraxes, also called dassies or coneys, are small, tailless mammals of the Order Hyracoidea that form populous colonies in arid, rocky terrain, where niches and crevices provide protection from predators and inclement weather. They forage on a wide range of plants, including some that are toxic to other animals. Colonies are ruled by a single territorial male, who, as the watchful guardian of the group, can communicate with his charges using at least twenty-one different vocalizations. The artificial colonies of Yemen apparently did not adapt well to their commensal habitat and all reportedly died.

Several Near Eastern ungulate groups remained outside the sphere of domestication. They have nevertheless experienced the relentless impact of overhunting and continue to suffer from habitat destruction. The most important of these groups are the antelopes and deer.

Near Eastern antelopes fall within two subfamilies, the Hippotraginae (addax, hartebeest, and oryxes) and the Antilopinae (gazelles). The addax (*Addax nasomaculatus*) makes its home in the most arid parts of northern Africa, but hunting has drastically reduced its numbers in Egypt. Large herds of hartebeest (*Alcelaphus buselaphus*) still graze the savannas of sub-Saharan Africa today, but they ranged across northern Africa and even into western Asia according to late nineteenth century travel accounts.

Two species of oryx have lived in the Near East. The scimitar oryx (*Oryx dammah*) is named for its long curving horns that arch gracefully over the back. It occupied arid areas of northern Africa, but is now extinct in the wild. The Arabian oryx (*O. leucoryx*), which bears long straight horns, also lost the fight for survival in its desert habitat in Syria, Jordan, and the Arabian peninsula. Ever since 1972, when the

final wild herd was eliminated in southern Arabia, a conservation effort entitled Operation Oryx has been re-introducing this species from captive populations (Stanley-Price 1989).

The adaptations of oryxes to arid conditions are of great interest. Coloration is light not only to reflect heat but also to blend in with the desert terrain. As forage is so widely scattered, males force young calves to wait, recumbent and camouflaged against their pale surroundings, while the adults graze at a distance. Drinking is a rare occasion for oryxes, and they can even survive without it indefinitely. Like camels, oryxes allow their body temperature to rise, delaying the onset of sweating, but they possess a further evolutionary device to resist the consequences of extreme heat and dryness. An oryx will endure elevated body temperatures initially, but beyond 41° C. (106° F.), the nervous system temporarily shuts down the sweat glands, and the animal enters a brain-cooling mode in which the body—especially the skin—is allowed to heat up further, while the brain is shielded from damage through a countercurrent blood mechanism (Taylor and Lyman 1972). Within the cavernous sinus at the base of the skull, the carotid artery subdivides into a vascular rete, or plexus of many small vessels. This rete also contains many small veins returning to the heart from the muzzle carrying blood previously cooled by nasal wall evaporation. Before consolidating once more into a single artery and passing into the brain, the hot carotid blood transfers some of its heat to the venous circulation, which conveys it back into the torso. As body temperature continues to rise, panting begins in order to increase vapor loss from exhaled breath and thus maximize the cooling effect within the nasal passageways. In this way, excess heat entering the cranium is siphoned off by venous flow, allowing the brain to remain at a temperature up to 4° C. (7.2° F.) below the rest of the body.

Oryxes expend as little moisture as possible to survive the desert heat, but their habitat provides little if any standing water from which they could replace the amounts lost through respiration, excretion, and evaporation from the skin. They recoup such deficits by foraging at night, when the air temperature drops and, as a consequence, relative humidity increases. Arid zone plants that are nearly waterless during the daytime tend to absorb moisture from the air in the very early hours of morning. Thus, the timing of feeding affords oryxes the opportunity to ingest atmospheric water and replace the small quantities that must be spent on heat defense and physiological maintenance (Taylor 1969).

Gazelles are antelopes of the Antilopinae subfamily. Until the end

of the nineteenth century, they were the most abundant ungulate in the dry parts of the Near East, forming herds that could mass at times of migration into the thousands. Several gazelle species still inhabit arid and semiarid biomes from northern Africa to India and Central Asia. The goitered gazelle (*Gazella subgutturosa*) has the most northern distribution, occupying various habitats from Iran as far east as Mongolia, but probably also extending westward into Mesopotamia and Syria in antiquity (Uerpmann 1987). Its name derives from the cartilaginous swelling on the larynx of males. Females are often hornless. The smaller and paler marica gazelle, or rhim (*G. s. marica*) from the Arabian peninsula is usually assigned to this species, and though its size and lighter-colored pelage are not unexpected variations in a hotter environment, the rhim is atypical of goitered gazelles in its habitat preferences and the fact that females commonly bear horns. The largest of the Near Eastern gazelles is the idmi, or mountain gazelle (*G. gazella*). In contrast to the goitered buck's lyre-like horns with prominently curved tips, both sexes of mountain gazelles possess nearly straight horns. One subspecies (*G. g. gazella*) inhabits the mesic highlands of the southern Levant, where a burgeoning modern human population has imposed mounting pressure on foraging territory. A smaller and paler variant of mountain gazelle also inhabits the more xeric areas of Oman (*G. g. cora*), and at least another five rare gazelle forms find refuge in other parts of the Arabian peninsula. Chinkara (*G. bennetti*) range across India, Pakistan, and eastern Iran, slender-horned gazelles (*G. leptoceros*) are native to northern Africa, and Sömmerring's gazelles (*G. soemmerringii*) occupy the Horn area of Sudan to Somalia. Dama (*G. dama*) and dorcas gazelles (*G. dorcas*) frequent arid north Africa west of the Nile, though a subspecies of the latter extends into southern Israel/Sinai (*G. d. isabella*).

Gazelles were probably the principal source of protein for prehistoric hunter-gatherers in the southern Levant at the close of the Pleistocene. The hunt was pursued at least in part by forced containment within large stone-built enclosures, remains of which have been found in the Negev and Jordanian deserts. Called desert kites (Harding 1954) because their layout on the ground resembles a kite with streamers, these simple structures continued to function as gazelle traps for bedouin into the early twentieth century. The kites consist of two long walls converging over many meters and feeding, at their bottleneck, into a corral that is often furnished with small compartments, or hides, for the concealment of hunters. Gazelle herds were driven through the open

end, after which the wide arms inexorably narrowed, eventually funneling the hapless animals into the corral, where they were presumably dispatched as desired.

Archaeozoological studies of Epipaleolithic Natufian sites reveal high percentages of gazelle remains (between 50–80% of the total bone collection from each site), as well as a strong selective bias for males (up to 80%) and immature individuals (between 30–60%). Based upon these intriguing figures, some archaeologists have raised the possibility that gazelles were selectively hunted or culturally controlled in some way prior to the development of full-scale caprine domestication in the Neolithic (e.g., Legge 1972; Tchernov 1993b).

Deer (Family Cervidae) are adapted to more mesic environments than gazelles, preferring open vegetated terrain near highlands and coasts, as well as the more temperate areas. Instead of horns, they bear antlers made of a modified bony material that grows anew each year from a pair of skin-covered protuberances called pedicels that form on the skull of males. In most species, a main stem, or beam, emanates from the coronet, a bulging knob atop each pedicel. As the antler grows, several appendages, or tines, branch out from the beam. The first antlers are usually simple spikes, and only over the next few years of regrowth does the rack attain the size and overall configuration typical for each species. The growth and loss cycle is broadly similar for all antlers. Emergence begins in the spring, when testosterone production is low, and the incipient rack rises, soft and thick, beneath a thin skin called velvet. By late summer, as testosterone secretion increases in preparation for the autumn rut, antler growth comes to a halt and blood flow to the velvet ceases, causing it to dry and crack. The fresh antler is then cleaned of residual velvet and burnished by rubbing it against trees and other objects. It eventually shrinks and hardens to a tough resiliency. Antlers function more for display than defense. The enormous output of metabolic energy required to grow them year after year contributes an important visual cue for ranking, which, along with body size, olfactory signals, and other indicators, determines social status and probably reduces the number of fights over access to females. Evenly matched males will become combative, but they tend to lock antlers and muscle each other, letting brute strength determine the victor without much stabbing and serious injury. Shortly following the rut, antlers are cast. They detach just below the coronet and fall to the ground.

Three deer species are indigenous to the Near East, while the range of a fourth extends into easternmost Afghanistan. Of the first three,

the largest, red deer (*Cervus elaphus*), ranges across Eurasia as far as Korea and currently survives within forested areas of Turkey, the Caucasus, and northern Iran. Archaeozoological evidence suggests that some populations formerly spread much further, at least as far south as Israel in the early post-glacial. Red deer stags grow large antlers with massive beams and six or more tines. Their generally grayish-brown winter coat sloughs off in spring, giving way to a more reddish-brown summer pelage. Red deer are herd-oriented, with stags segregating from hinds and calves for most of the year. During the rut, the herds converge, and dominance hierarchies established among the stags determine which individuals will attract and hold a harem of hinds for mating. After calving in the spring, hinds conceal their newborns while they forage. The white-spotted coloration of their young provides ideal camouflage against the dappled pattern of sunlight on thick vegetation. The spots disappear with the first winter coat.

Roe deer (*Capreolus capreolus*) are the smallest Near Eastern cervids, and their habitat and geographic distribution overlaps closely with that of red deer. Antler form is simpler—a beam rising to a fork with one forward pointing tine midway up. Antler surfaces, especially near the base, are frequently covered with pearls, small thorn-like bumps that create a very rough texture. Winter finds roe deer dark grayish-brown in coat, with a red shift after the molt. Social organization is largely in small family groups. Well before rutting starts, bucks exhibit territorial behavior, marking their domains by rasping white patches into the bark of many trees with their antlers and gouging bare spots into the ground that retain the scent of their interdigital glands. They pair with a favorite doe, defending her from advances by other bucks, but are liable to leave their territory to mate with other does that enter estrus. A curious courting ritual precedes mounting in which the buck chases the doe around a circle of varying diameter. The pair may pause to rest occasionally, but they invariably resume the chase until the doe is ready to be covered. Mating takes place in late summer, quite early compared to other cervids. Roe deer are unique, however, in delaying uterine implantation to lengthen gestation and insure that birthing occurs in the spring. Fawns are also white-spotted.

Fallow deer (*Dama dama*) are medium in size and appear capable of colonizing somewhat drier biomes (Chapman and Chapman 1980). Debate persists over whether the genus *Dama* should be subsumed within *Cervus*, but two subspecies are recognized: the European/Anatolian (*Dama dama dama*) and the Mesopotamian/Persian (*D. d. mesopotamica*).

Dama antlers are distinctive in being palmate; the highest part of the beam thins to a broad, flat, hand-like shape, with small, finger-like tines called spellers projecting from the top and rear edges. In the Mesopotamian subspecies, palmation develops lower on the beam and often involves the second, or bez, tine. There is great variation in pelage across fallow deer populations. Winter coats tend toward gray-brown, becoming lighter on the undersides, but in summer, a reddish-brown with white spots is not uncommon. The same kind of spotted coat is not always present in newborns. Fallow deer segregate into discrete male and female herds like red deer, but at the rut, bucks claim small adjacent territories, setting boundaries with tree patches, ground scratches, and scent marking. They mate with as many does as they can attract with their bellows and ritualized movements.

Little can be said about the Syrian elephant, which occupied riverine and open forests in Syria and Iraq up until at least the early first millennium B.C. (Zeuner 1963; Hatt 1959). According to its appearance in a number of representations, it was related, if not identical, to the Asiatic elephant (*Elephas maximus*), which formerly ranged over much of South and Southeast Asia. Its presence in the Near East is attested in Egyptian and Assyrian accounts of royal hunts, but upon its demise, provision of ivory into southwestern Asia must have shifted to the African elephant (*Loxodonta africana*). Remains of an extinct, dwarfed pygmy elephant (*Elephas cypriotes*) are known from several sites on Cyprus (Caloi *et al.* 1996), including the early Neolithic Aetokremnos (Simmons *et al.* 1999).

Two carnivores became important domestic animals in antiquity. The wolf (*Canis lupus*) apparently gave rise to the dog (*C. familiaris*), and in the modern Near East, two subspecies are recognized, one (*C. l. pallipes*) occupying semiarid and Mediterranean areas, and the other (*C. l. arabs*) limited to the southern desert regions. The transition appears to be clinal, with increasingly smaller and paler forms grading toward the typical *arabs* with progressive dryness. Pelage is mottled and variable, but coloration is generally brownish-gray in the more humid biomes, and more yellowish-gray around the desert fringes. Today's wolves prefer open areas, hunting mostly small wildlife at night either singly, in pairs, or in small packs, but occasionally scavenging in human middens or attacking livestock. One intriguing observation made of some Near Eastern wolves is their disinclination to howl, a practice perhaps explained by the steep pressure gradients and strong winds of the desert

night that prevent sound from carrying any substantial distance (Joslin 1982).

Canid skeletons have been recovered from several Epipaleolithic Natufian graves in which the animals were interred together with deceased humans. The bones differ from those of wild wolves in having smaller anterior jaws and teeth as well as shorter limbs and modified articular surfaces. These features indicate a modest degree of evolutionary change but do not necessarily imply purposeful selective breeding, as the greater morphological variation of later Neolithic dogs possibly reflects (Tchernov and Valla 1997). Natufian dogs may, therefore, have been commensal wolves whose increasing dependence upon life with humans led inadvertently to anatomical adjustments brought about by a more sedentary routine.

Several other canids inhabit the Near East. Golden jackals (*Canis aureus*) are occasionally misidentified as wolves, however, the jackal's coat is tawnier and coarser in texture than that of the wolf. Jackals also pursue a more omnivorous diet, which can include fruits, insects, snails, and fishes, as well as opportunistic hunting of small mammals and scavenging of large carcasses. Further, they tend to occupy more varied habitats, even venturing close to human settlements. Their association with ruins made them a symbol of destruction and desolation in biblical literature (Borowski 1998). In addition, five species of fox are native to the Near East, two of which—Rüppell's fox (*Vulpes rueppelli*) and the fennec (*Fennecus zerda*)—are specialized desert dwellers.

The wild cat of Eurasia (*Felis sylvestris*) gave rise to the domestic cat (*F. catus*) at least as early as dynastic Egypt, but it is possible that household felines had already emerged in previous millennia. As pets, cats were valued most likely for their stealthy prowling after commensal pests. They gradually became popular in Europe only with the northward spread of intrusive rodents such as house mice (*Mus musculus*) and black rats (*Rattus rattus*). Anatomical similarities link modern cats most closely with the North African (*F. s. libyca*) and eastern Mediterranean (*F. s. ornata*) subspecies, both of which bear the familiar tabby pattern of distinct or spotty stripes running vertically or obliquely from the back to the undersides. The overall tabby coloration is created by hairs that vary in pigmentation along their length.

Excluding feral cats, most wild felids of the Near East are endangered or locally extinct. Lions (*Panthera leo*) are no longer free-ranging outside Africa and India, but formerly they lurked within densely vegetated habitats alongside rivers and marshes. Historic accounts make it

clear that they posed a serious threat to livestock and humans, even into the early twentieth century, and their frequent appearance in ancient art and literature as symbols of awesome power demonstrates a sober respect for their strength and ferocity. The hunting of captive lions served as royal Assyrian and Egyptian propaganda to show the monarch testing his prowess in the most heroic of activities. The Caspian tiger (*P. tigris virgata*) occupied riverine jungles of northern Iran and Afghanistan until hunting and habitat reduction caused their local demise only about half a century ago. Leopards (*P. pardus*) have refused to succumb, however, and still haunt the hills and mountains of the Near East. They display the typical African coloration of bichromatic spots (black dots surrounding a lighter brown center) scattered upon a yellowish background. Leopards are shy and solitary, and they generally avoid human contact, a factor that has doubtless been to their advantage.

Marine mammals of the Near East were apparently not heavily exploited in antiquity. Rare archaeozoological examples include the tenth millennium B.C. hunters of Caspian seal at Belt Cave in northern Iran (Coon 1957), and the groups that preyed upon sea cow at third millennium B.C. Arabian Gulf sites such as Umm-an-Nar and Ras Ghanada in the United Arab Emirates (Uerpmann 1987). Such species are quite high on the list of endangered species today, due to deliberate killing by humans, accidental death by entanglement in fishing gear, pollution, and habitat destruction.

Caspian seals (*Phoca caspica*) are small phocids, or hair seals, growing as long as 140 cm (55 in) and weighing up to 80 kg (175 lb). Grayish yellow in color with irregular black spotting, they are the only seals inhabiting the Caspian Sea. In early winter, the seals mass toward the northeast, where shifting ice floes crumple to form sheltered crevices for pupping. The white, furry pups are born in January and February. With summer approaching, the seals move to the deeper and cooler waters of the southern Caspian coast, near Belt Cave. They consume a variety of marine creatures, including fishes and crustaceans, and will also swim into estuaries in search of freshwater prey. Mediterranean monk seals (*Monachus monachus*) are larger phocids that range up to 270 cm (105 in) in size and weigh as much as 300 kg (660 lb). Their dark brown to black coat lightens toward the undersides, where a whitish patch commonly occurs. Unusual among seals because of their tolerance of warm water, monk seals are most concentrated in the Aegean, but smaller populations—which may now be extinct—have been iden-

tified in the eastern Mediterranean, southern Black Sea, Adriatic, along the coasts of Algeria and Morocco, and in the Atlantic between Spanish Sahara and Madeira. Monk seals frequent shallow waters off deserted coasts and islands where human disturbance is minimal. Between September and October, pups are born with a black, woolly coat, which molts at weaning after about six weeks. Unfortunately, monk seals have fared poorly in the Mediterranean. They have been harassed by fishermen for their habit of poaching catch out of nets, and an ever-expanding tourist industry has gradually encroached upon their choicest habitats. Concern for their sharply declining numbers has prompted much field research, accompanied by international conferences designed to review findings and establish conservation guidelines (e.g., Johnson and Lavigne 1998).

The sea cow, or dugong (*Dugong dugon*), is a large, fully aquatic marine herbivore, with thick, loose, dark brown skin. Dugongs prefer mostly shallow, near-shore waters, where they graze on a variety of sea grasses (Marsh 1981). While still common in Australia and formerly quite numerous throughout the Indian Ocean littoral, they have come close to extinction in the Arabian Gulf and Red Sea. In the wild, they appear to be long-lived, surviving perhaps to fifty years of age, but reproduction is slow, and the prospects for recovery, even with protective laws, are uncertain. A single calf is born after a gestation of approximately twelve months, and lactation may last eighteen months to supplement the calf's rapid weaning onto sea grass. Frequency of mating varies widely, but cows generally do not become pregnant again for several years. They prefer to invest care in the rearing of one calf at a time. Two mammary glands, one located near each axillary pit of the cow's flippers, endow the female with an almost human appearance, which may have given rise to the imaginative association of dugongs with mermaids.

Cetaceans (whales and dolphins) are infrequent visitors to Near Eastern waters, and archaeology suggests little, if any, exploitation. Dolphins, however, earned a special importance in the mind of the ancients. Most are widely-dispersed, cosmopolitan denizens of nearly all the world's oceans, but at least eight species are known to navigate the Mediterranean and Red Seas as well as the Arabian Gulf. Apparently, their curiosity and playfulness with ships at sea set them apart as amiable and intelligent creatures. Such behavior is especially marked among bottle-nosed dolphins (*Tursiops truncatus*), the species most often trained to perform in aquarium shows because of its ability to adapt in captiv-

ity. Ancient legends with strong roots in truth arose about dolphins helping humans adrift in the water and seemingly being attracted by the strains of music (Montagu and Lilly 1963). According to myth, Icadius, son of Apollo, founded a temple to his father at the foot of Mount Parnassus. Delphi was the name he chose for the place to recognize the dolphin that had earlier rescued him from a shipwreck and delivered him safely to that spot. The profusion of dolphin imagery in the art of the Nabataeans clearly derives from Hellenistic tradition, yet it seems oddly out of place in the arid, mountainous geography of the southern Levant and northwestern Arabia. As an explanation, the dolphin's reputation for relief and succor during perilous journeys may have held deep symbolic meaning for caravans plying the trade routes that linked the isolated, commerce-based cities of the Nabataeans' desert archipelago (Glueck 1966).

Outside specialized zoological publications, hardly a word is ever written about the two most populous mammalian orders: rodents and bats. Of all the mammals, the Order Rodentia exhibits the greatest diversity across space and through time. At present, over 1700 species are recognized globally, though taxonomic uncertainties abound. The extremely narrow ecological requirements of many rodents give them an archaeological value well in excess of their generally diminutive size, for recovery of their remains often conveys useful information about paleoenvironmental conditions (Tchernov 1968). The distribution of small mammals in general is also highly sensitive to anthropogenic habitat modifications, for example, the retreat of the beaver (*Castor fiber*) as Near Eastern deforestation progressed during the past four millennia. In contrast, several rodents have taken up residence within the structures and amidst the residues of human settlements. The commensal house mouse (*Mus musculus domesticus*), for example, first appeared in the Epipaleolithic Natufian culture of Palestine, arising perhaps from the wild mouse (*Mus spretoides*) and emerging in synchrony with the earliest Near Eastern sedentism (Tchernov 1991). Remains of the spiny mouse (*Acomys cahirinus*) also increase in frequency at the time, suggesting that it also became commensal with the onset of Natufian village life.

Second in diversity after rodents are the bats (Order Chiroptera), of which more than 900 species are distributed nearly worldwide (Nowak 1994; Altringham 1996). As the name Chiroptera implies (*kheir* "hand," *pteron* "wing"), all bats have a hand structure adapted for flight. Elongated forearms and fingers are connected to the legs by the patagium,

a leathery wing membrane, leaving the thumb, which varies in length from species to species, as the only independent digit. The foot therefore serves as the principal grasping organ for use in predation and roosting. Insectivorous bats are grouped within the suborder Microchiroptera, but a number of them consume other arthropods and small vertebrates. None of the Near Eastern varieties feeds on blood (sanguivory), as vampire bats occur only in the American tropics. The suborder Megachiroptera is limited to the Old World tropics and includes the larger fruit-eating bats that often play an important role in pollination and seed dispersal.

The nocturnal activity of bats brings them into little direct contact with humans. Contrary to popular expression, they are not blind. Visual acuity is generally good, but many microchiropterans are adept at flying and foraging in total darkness because of echolocation—the ability to navigate based on echoes from sounds they produce themselves. These sounds originate in the larynx and emerge from the mouth or nostrils. Many species possess a bizarre fleshy growth resembling a leaf arrayed across the face that aims and focuses the emission. The external ears, or pinnae, are large and prominent with cartilaginous folds to improve reception and pinpoint the direction of faint incoming reverberations. Bats are extraordinarily noisy in flight, but because the frequency of their signals (20 to 120 kHz) exceeds the range of human hearing (40 Hz to 20 kHz), most of this sound is inaudible. Bats therefore appear to flit silently in the dark, when in reality they trumpet their high pitched calls at near deafening intensities (50 to 120 dB). High frequency sounds are rare in nature, and thus by using them, bats encounter little interference from other sources while attracting few predators sensitive to their cries.

Most microchiropterans prey upon nocturnal and crepuscular insects, voraciously snatching millions out of the nighttime air and occasionally reducing serious agricultural pests in the process. Some may also exercise a degree of prey selectivity, as the nature of the return signals permits them to lock onto targets of a particular size and wing beat pattern. Other microchiropterans rely more on noises produced by their prey to home in on the capture. In contrast, flight orientation in megachiropterans is mostly visual, and only a few species, such as the Egyptian rousette (*Rousettus aegyptiacus*), navigate by sound generated through rapid tongue clicking.

Microchiropterans are small mammals, and as such they must generate appreciable warmth to counteract the rapid heat loss characteris-

tic of creatures with a large surface to mass ratio. To conserve energy when ambient temperature drops, and perhaps to weather intervals of declining food supply, these bats will often enter periods of torpor during which their internal body thermostat is reset and maintained at a lower level. Torpid bats remain inactive with body temperature near that of their surroundings. Heartbeat and breathing rate decrease dramatically, metabolic processes slow, and vascular constriction diverts substantial blood flow from the extremities to the core organs. Stored calories are burned periodically to keep from chilling below some lethal limit, and arousal occurs spontaneously, often to allow brief foraging episodes before another period of torpor begins. Many bats enter torpor all year round during daylight hours to economize on their energy reserves, and they will do so also when raw, wet evenings dampen the prospects for a successful hunt. Fruit bats rarely resort to torpor, as their larger size and more reliable food supply helps support a permanently elevated body temperature. They endure cold snaps by wrapping themselves within their leathery wings to create an insulating air space.

Much of a bat's life is spent roosting. Roosting sites include caves or other rock crevices, artificial substitutes such as mines, tombs, and ruined or abandoned structures, and trees, all of which are chosen to provide shelter, time for energy budgeting, safety from predation, and better mating and nursing opportunities, among other factors. Roosts are occupied for varying periods, and with varying frequency of return, by large or small groups (from a few individuals to colonies of several hundred thousand). Mating behavior is diverse and dependent upon numerous social and ecological circumstances. Males may defend a territory and hold onto a female harem within it, or they may move with more mobile female groups that remain cohesive. When the group structure of foraging and roosting females is extremely unstable, males will often form leks—small territorial domains established in places frequented by females and from which they engage in display behaviors designed to attract mates as they pass by.

BIRDS

The Near East figures importantly in avian ecology. In addition to year-round residents, many migrant species overfly the region as they move between summer breeding areas in northern Eurasia and wintering

grounds in the Near East, Africa, or South Asia (Moreau 1972). Most of these migrants spend the warm months in temperate to subarctic biomes between central Europe (20° E. long.) and Siberia (>90° E. long.), and their journeys can be as short as 1500 km (930 mi) for species crossing the Sahara to as long as 10,000 km (6200 mi) for those far to the northeast, such as the Amur falcon (*Falco amurensis*), which must fly generally southwest to circumvent the high Tibetan plateau. Some birds enter Pakistan and India for the winter, but they find there only one-third as much favorable habitat as in Africa, which consequently draws far greater numbers of avifauna in search of milder climes. Some species known to occupy quite distant ranges have been observed on rare occasions within the Near East and are referred to as vagrants or accidental visitors. A detailed listing of bird species compiled from recent ornithological observations conducted in most countries of the Near East is provided in Table 1.2. It includes scientific and vernacular names, conservation status, and based upon the modern evidence, coded indicators identifying the behavior of the species (resident, migrant, winter visitor, etc.) in each of seven geographic subdivisions of southwestern Asia.

Migrants move along a broad front, proceeding directly over intervening seas and deserts where stopovers are limited or non-existent (Moreau 1972). Autumn movements carry them across territories in central and southwestern Asia as well as northern Africa that offer limited resources after the long rainless summer. Most continue the journey across the Sahara desert, where little shade is available, and there is virtually no food or water. The bulk of the migrating species eat arthropods (largely insects) supplemented by seasonal fruits and seeds. As all such resources are in short supply until the birds reach the Sahel, southward flights are conducted as quickly as possible, usually aided by northerly tail winds blowing their way. The return flight in spring, which does not necessarily retrace the autumnal route, goes generally against the prevailing wind direction but passes through areas rendered more bountiful by the rains of winter. Migrants are often observed at differing frequencies in fall and spring not only because their seasonal routes differ, but also because many fly at night or at elevations too high for ground sightings.

Soaring birds (including eagles, buzzards, hawks, kites, storks, and pelicans) migrate along well-defined tracks that have been referred to as the East European flyway. These species glide with minimal energy expenditure on warm air currents rising from heated land surfaces.

They avoid open water, preferring to follow coastlines and low pressure corridors, such as the Jordan rift valley, when not passing over interior areas. The birds converge to cross the Bosporus between the Black and Aegean Seas, circumnavigate the east end of the Mediterranean, and, for those species flying into Africa, negotiate the Red Sea barrier either by traversing the Sinai or passing across the narrow marine gap of the Strait of Bab el-Mandeb at the southwestern tip of the Arabian peninsula.

The energetic demands of long migrations must be met by fat stored up prior to departure. Birds will rest where they can along the way and will usually minimize their efforts by catching favorable winds at whatever elevations they happen to be blowing, between 500 and 3000 m (1600 and 10,000 ft) in altitude. By flying higher, heat load is reduced, and the only water lost is through exhalations, not thermoregulation. But birds have no warning of weather conditions in their path, and many thousands may perish during extreme turbulence or drought. Violent winds can drive them far off course or blow them out of the sky, fog or other visual limitations can lead to collisions, and severe desiccation on the ground can cause starvation of migrants in transit.

Climatic variability has certainly affected migratory behavior over the millennia, but anthropogenic influences probably also account for a great deal of plasticity in migration patterns. Birds have disappeared from some areas only to reappear later when circumstances favoring their existence improved. Modern events have demonstrated in graphic detail some of the effects of human interference. The reduction of wetlands, for example, has created difficulties by eliminating critical refuges used by residents and migrants. Swamp drainage for land development in the 1950s in northern Israel (Lake Huleh) and in eastern Turkey (Lake Antioch) eliminated the local populations of darters (*Anhinga melanogaster*), while the loss of wetland in Israel drove white pelicans (*Pelecanus onocrotalus*) and cormorants (*Phalacrocorax carbo*) to raid nearby commercial fish ponds, substantially cutting into piscicultural inventories. The resultant persecution of the avian pests nearly exterminated the cormorants. With the restoration of marshlands, the birds have been encouraged to resume their stopovers in the natural preserves (Paz 1987; Shirihai 1996). Inevitably, current data reflected in the bird list of Table 1.2 will deviate in various ways from the distribution patterns of antiquity, which probably also experienced appreciable variability.

Modern bird hunting, for both amusement and food, has also had a

costly impact on Near Eastern avifauna. On Cyprus, for example, predation has been carried out not only by gun, but also by cruel forms of trapping and netting (Flint and Stewart 1992). Until such inhumane practices were outlawed, limesticks—sticks coated with glue—were placed in trees and shrubs where unsuspecting birds, especially autumn migrants, would become stuck. Often dangling helplessly for days, they would eventually be pulled off, plucked, and pickled for later consumption. Blackcaps (*Sylvia atricapilla*), lesser whitethroats (*Sylvia curruca*), and chiffchaffs (*Phylloscopus collybita*) were most sought after by the limers, but over one hundred other species were caught, including rare or endangered ones, such as Eurasian thick-knees (*Burhinus oedicnemus*) and barn owls (*Tyto alba*). Using another tactic, finely meshed mistnets were erected against a backdrop of foliage to make them nearly invisible to birds, which, after becoming ensnared, would struggle for hours to extricate themselves. Mistnets entangled an even wider variety of birds, from aerial swifts and swallows to ground-dwelling chukars (*Alectoris chukar*) and quails (*Coturnix coturnix*). A further threat came from egg collecting, which indiscriminately robbed out entire nests belonging to vulnerable sea and shore birds such as terns, gulls, plovers, flamingos (*Phoenicopterus ruber*) and ospreys (*Pandion haliaetus*), in addition to land birds such as chukars, sand partridges (*Ammoperdix heyi*), and ostriches (*Struthio camelus*) (Goodman *et al.* 1989). With liming and netting now illegal on Cyprus, and shooting forbidden in spring, an astonishing ten million birds may be spared annually on that island alone.

Evidence of bird hunting is not commonly discovered in the archaeological record because the fragile avian skeleton, if it is not completely consumed, does not readily survive cultural handling and burial diagenesis. Even when the delicate parts of small birds are preserved, they generally do not possess sufficient diagnostic detail to enable an accurate identification of the species or genus. Larger birds with more durable and identifiable bones are occasionally recovered. One such example is the substantial concentration of great bustard (*Otis tarda*) remains, possibly including eggshell fragments, retrieved from the site of Aetokremnos on Cyprus (Simmons *et al.* 1999). Currently, great bustards breed in northern Turkey and Iran, and they are very rare winter visitors to the island of Cyprus. If the shell debris does indeed signify bustard breeding, the fledgling Holocene climate of the ninth millennium B.C. might have permitted avian reproductive activities at more southerly latitudes than is observed today. Despite matters of poor preservation for bird remains overall, avifauna may have been eaten as widely

in the past as they are at present in nearly every Near Eastern country.

Egypt has left an extensive body of evidence for avian exploitation in its painted and relief art, as well as hieroglyphs, which depict a wide variety of bird life (Houlihan 1986). Several species are worthy of note. Of the two Near Eastern subspecies of ostrich, the Levantine and Arabian *Struthio camelus syriacus* has been extinct since the early twentieth century, a victim of overhunting. The north African form (*S. c. camelus*) has been observed on rare occasions, mostly in the southeastern desert, but numerous appearances in art, including predynastic rock drawings, suggest that in antiquity it was more widespread. Egyptians valued ostriches mostly for their plumes and eggs, the shells of which also served as containers. Herons and egrets are also frequently represented, appearing in their natural wetland habitat and occasionally in the employ of fowlers as tame decoys, deployed to lure wild birds into closer range. The gregarious cattle egret (*Bubulcus ibis)* is perhaps the most common member of the Family Ardeidae in Egypt today. Undaunted by humans, it has become a symbiotic ally to the Egyptian farmer by feeding on agricultural insect pests. Sacred ibises (*Threskiornis aethiopicus*) appear often in art and hieroglyphs, but despite their importance to Egyptians as the earthly manifestation of the god Thoth, they have been locally extinct since the nineteenth century, most likely due to habitat loss. Fiercely protected during the earlier dynasties according to Herodotus, sacred ibises were bred and killed by the thousands in Ptolemaic times by a votive industry that interred the mummified remains in ritual cemeteries on behalf of the pious seeking Thoth's favor. Among birds of prey, Eurasian griffons (*Gyps fulvus*) and lappet-faced vultures (*Torgos tracheliotus*) are commonly depicted on tomb walls. With a wingspan approaching 3 m (10 ft), the latter is one of the largest birds in Africa. An aggressive and powerful raptor that may hunt small animals on its own, it usually dominates and displaces other avian scavengers around carrion, tearing even the thickest hides of elephant and rhinoceros with its hooked bill. The ubiquitous Horus falcon of Egyptian art is usually stylized and embellished, but it includes features common to four of the local species: Eleonora's falcon (*Falco eleonorae*), the Eurasian hobby (*F. subbuteo*), the lanner falcon (*F. biarmicus*), and the peregrine falcon (*F. peregrinus*). A number of scenes illustrate the force feeding of birds such as greylag geese (*Anser anser*), pintails (*Anas acuta*), turtle doves (*Streptopelia turtur*), and common cranes (*Grus grus*) to fatten them for the table. Red junglefowl (*Gallus gallus*), which became our domestic chicken, were introduced into the Near East from eastern

Asia during the second millennium B.C., though they probably did not emerge as a comestible in Egypt until Ptolemaic times. Other frequently attested species in Egyptian art include purple gallinules (*Porphyrio porphyrio*), which figure commonly in scenes of marsh fowling with throwsticks and clap-nets, pied kingfishers (*Ceryle rudis*), northern lapwings (*Vanellus vanellus*), and hoopoes (*Upupa epops*), the last two sometimes appearing in the hands of young children, suggesting that they were kept as pets.

Two sub-Saharan species never observed in modern Egypt appear briefly in early representations, suggesting that they inhabited the Nile valley at the dawn of dynastic rule (Houlihan 1986). The saddle-billed stork (*Ephippiorhynchus senegalensis*) can be found in late predynastic relief carvings but is absent in art after Dynasty I. A long-legged wader represented in the Dynasty V mastaba of Ti at Saqqara and interpreted by some as a whale-headed stork (*Balaeniceps rex*) might indicate the former existence in Old Kingdom Egypt of permanent papyrus swamps like those of tropical Africa that are this stork's primary habitat.

OTHER ANIMALS

Other animal phyla are well represented in the Near East, as the zoological bibliography will attest, but only a few species selected for their cultural significance in antiquity are considered here.

The Nile crocodile (*Crocodylus niloticus*) still occupies most of the river basin, though it has retreated from areas with higher human population. Adult size averages 3.5 m (11 ft) from its pointed snout to the tip of its muscular tail, but individuals have been observed to reach 6 m (20 ft) long, ranking it as one of the world's largest crocodilian species. Common haunts are alongside streams and lakes, where it is often found basking in the sun with jaws open. Gaping exposes the moist interior skin of the mouth and helps the animal cool down, while it also offers an opportunity to the Egyptian plover—sometimes called the crocodile-bird—(*Pluvianus aegyptius*), as well as the spur-winged lapwing (*Vanellus spinosus*) to practice their brand of dentistry and pick the crocodile's teeth. Excessive heat eventually drives the reptiles into the water.

Crocodiles usually hunt singly, or as a male-female pair, by lurking, submerged, near the water's edge. When thirsty wildebeest, gazelles, or

other land animals approach to drink, crocodiles lunge and drag the victim into the water with their powerful jaws to be drowned. They then proceed to tear the prey apart, usually by spinning while clamped firmly onto an appendage of the carcass. As they thrash about, the nostrils close, and a flap of tissue at the back of the tongue is brought into tight contact with the rear of the palate to form a gular pouch that blocks off the throat. In this way, water is prevented from entering the crocodile's body during its underwater gyrations. Dismembered pieces of the catch are swallowed at the water's surface, where, with a backward jerk of the head, the morsel slides past the now open gular pouch. Crocodiles also scavenge, and in the process, they serve a benign sanitary function by keeping the waterways clear. Very strong digestive juices reduce most of the stomach contents, yet indigestible residues accumulate, which are eventually regurgitated. Some mystery still surrounds the crocodile's habit of swallowing stones, which in sum are equal to a small but consistent percentage of their total body weight. Once they reach a certain size, crocodiles seek out stones and take them into the stomach, where they remain. Eventually, additional gastroliths, as they are called, are swallowed to replace those lost to regurgitation or to keep pace with growth. Ingestion of stones may be related to specific gravity and the maintenance of an optimum hydrodynamic balance between body and water, but the reasons are yet unclear.

Maternal instincts are strong in crocodiles. After digging a depression near the shoreline as deep as her hind foot will reach, the female lays from sixty to eighty eggs, catching them before they fall and placing them gently on the bottom of the hole with the same foot. She then buries the eggs with sand and remains on guard nearby for about three months to protect the nest. When faint grunts emerge from the young signaling the onset of hatching, the mother uncovers the eggs, helps crack them open with her teeth, and carries the hatchlings to the water in her gular pouch. Despite all the diligent parenting, predation is heavy, as pigs and monitor lizards root out the eggs, while birds, turtles, and catfishes consume the young crocodiles. The survival rate for a nest is invariably less than 5%.

The honeybee was almost certainly exploited by humans in Paleolithic times, as rock drawings depicting prehistoric honey hunting by foraging peoples have been found in late Pleistocene and early Holocene contexts of southern Europe and northern Africa (Crane 1999). Several species occur across the temperate and tropical regions of Eurasia and Africa, but the western honeybee (*Apis mellifera*) is the in-

digenous form, inhabiting the more mesic, vegetated areas of the Near East where nesting sites and plant resources are plentiful. A colony comprises a single queen that is the sole producer of eggs, a worker force consisting of thousands of generally non-reproductive females, and a limited number of male drones that mate with the queen and then die. Eggs are laid within cells of the comb, a compartmentalized structure shaped by workers out of beeswax, which they themselves secrete. Sections of comb hang sheet-like from the ceiling of a sheltering cavity, frequently in a tree hollow or cave, with space left at the bottom and sides to allow workers to pass around each comb to a deeper part of the hive. When adults emerge from their pupal stage, usually in late spring or summer, the hive population swells to massive proportions. At this time, the queen departs with a large percentage of the worker force, creating a mobile swarm that scouts out locations for a new colony. The original hive is often left to a newborn queen.

Beekeeping in the full sense of hive maintenance is attested in Egyptian tomb art of the third millennium B.C. (Crane 1999), but it likely had earlier origins. Presumably, wild colonies were encouraged to occupy artificial cavities prepared in anticipation of their seasonal swarming, after which the hives were moved into proximity to settled communities. The earliest hives depicted in Egyptian representations appear to be earthen cylinders, some possibly made of ceramic but others apparently molded of sun-dried mud, that were slightly convex in shape and stacked horizontally. As is the case in traditional hives of Egypt today, bees entered these containers through small flight holes in the front and built their combs within the interior, while the beekeepers extracted honeycomb from the rear after pacifying the bees with smoke. In a cuneiform law code from Hittite Boğazköy (ca. 1500 B.C.), apicultural ordinances stipulated the penalties in shekels of silver for theft of a swarm or of a hive, empty or occupied (Collins 1989; Crane 1999).

Judging from the ethnographic record as well as historical evidence, almost everything about bees is usable. Honey, their principal product, is flower nectar condensed through evaporation and transformed by the addition of the enzymes invertase and glucose oxidase from the workers' hypopharyngeal glands. Invertase inverts the sucrose in nectar and produces glucose and fructose, of which the latter is highly hygroscopic (absorbs water). In the presence of water, the glucose oxidase breaks down glucose into hydrogen peroxide and gluconic acid, both of which inhibit the growth of microorganisms and thus retard spoilage. The overall sugar content of honey is also antimicrobial.

Honeys manufactured by *A. mellifera* contain up to 80% sugar, which promptly dehydrates any microscopic life through osmosis and thus prevents the onset of fermentation by most yeasts. Deposited in the comb, honey serves the bees as food when nectar and pollen are unavailable. To humans, this sweet, syrupy confection was an ingredient in various foods and medicines, and it also served as an embalming additive. Numerous references indicate that it was employed in ritual offerings. The comb itself could be used, consumed together with its honey or larval brood, or refined into wax for industrial purposes, such as modeling, sealing, metal casting, pigments, writing tablets, adhesives, cosmetics, pharmaceuticals, or dye resists. Other products included royal jelly (the food prepared especially for developing queens), bee-collected pollen, or "bee bread" (the bees' protein source that was valued for curative properties), and propolis (a healing exudate from wounded plants that bees gather for caulking and sealing the hive as a defense against other organisms).

Though bees themselves are eaten in other parts of the world, it is uncertain whether they ever were in the ancient Near East. Biblical dietary prohibitions forbade the consumption of most insects, including honeybees, but they permitted the eating of those having "legs above their feet, with which to leap upon the earth" (Lev 11:21). A relief panel from Sennacherib's palace at Nineveh does indeed show servants bearing skewers of locusts to the Assyrian king's table (Barnett 1998: pls. 436, 438–439), and there is much evidence for grasshopper gastronomes—what the ancient Greek historians called *acridophagi*—in Europe, Africa, and the Near East (Bodenheimer 1951). Perhaps such a menu exacted fitting revenge upon the locust, a ravenous pest that habitually masses into enormous swarms that have, throughout recorded history, wreaked devastation on crops and natural vegetation, causing ruin and famine among farming societies across the Old World arid zone. The most feared species is perhaps the desert locust (*Schistocerca gregaria*), which is active from the Atlantic coast of northern Africa eastward to India. It is a creature responsible for calamitous outbreaks like the Eighth Plague of Exodus 10 and that described at length in the book of Joel 1–2:27 (Baron 1972).

Locusts, members of the arthropod Family Acrididae, display a curious density-dependent polymorphism keyed to the irregularities of desert rainfall. The particular trajectory taken by the life cycle, including aspects of appearance, behavior, and demographics, is highly sensitive to the seasonal pattern of wind and moisture. During rainless

periods, the locusts exist in a "solitarious" phase as isolated individuals subsisting on the scarce xerophytic vegetation. Failed or sporadic precipitation keeps them dispersed, but if a series of weather fronts should release an abundance of moisture and create a sustained burst of plant growth, conditions arise that catapult the locusts into their dangerous "gregarious" phase.

Reproduction begins when the female finds appropriate soil conditions. After copulation, she embeds one hundred or more eggs into the moist ground, and the young hoppers (nymphs) that emerge from their pods two weeks later pass through five instars, or molting stages, as they shed successive exoskeletons to accommodate their growing body. After the fifth molt, the adult emerges with wings that enable it to fly substantial distances. Favorable circumstances for breeding draw solitary locusts to the same egg fields, and as population density increases, a swarm takes shape. Young hoppers without wings may march off in search of new vegetation, maturing as they go, but eventually, huge numbers result from the successful multiplication of many generations, all assuming their gregarious hues of black and yellow and reaching maximum size with a wingspan of 10 cm (4 in). When plague conditions are reached, hundreds of millions of adults may take to the air, moving with winds that converge on low pressure zones where the tropical rains continue to provide forage. Large swarms can blanket hundreds of square miles, like a living blizzard, devouring every plant in sight and cruelly ravaging the harvest as it matures in the field. Swarms spread inexorably, overflying the Red and Arabian Seas at altitudes of several thousand feet, then descending onto the land, streaming and billowing like dark, animated clouds in the wake of a storm. In the past, swarms could remain viable continuously over a number of plague years simply by passing on to new regions with the changing seasons and leaving only solitary individuals behind to face the dry months. Locusts still posed serious problems in Asia and Africa until the 1960s, when land-based prospecting to locate breeding areas and airborne spraying of pesticides on incipient swarms began to turn the tide in favor of the farmers and herders.

Currently, seventy-five species of scorpion belonging to twenty-seven genera are recognized in southwestern Asia, most adapted to living under arid conditions. Their fearsome aspect arises from the venomous sting carried at the end of their flexible metasoma. Often thought of as a tail, the metasoma is, in fact, an extension of the lower abdomen and consists of five segments that become progressively longer

toward the tip. The anus is located on the underside of the final segment. Terminating the metasoma is a large, hook-shaped telson, within which a pair of oval glands secretes venom through ducts into the long, needle-like aculeus. Rapid thrusts with the metasoma deliver small amounts of potent neurotoxic proteins that kill by disrupting a victim's nerve impulse transmission. Near Eastern species that pose sufficient danger to humans to be classified as "medically important" include the fat-tailed scorpions (*Androctonus australis* of North Africa and *A. crassicauda* of the Levant, Turkey, and Iraq), the common yellow scorpion (*Buthus occitanus* of North Africa and the Levant), and the yellow scorpion (*Leiurus quinquestriatus* of North Africa, the Levant, and Turkey).

Scorpions are efficient nocturnal predators, feeding largely on insects, spiders, or cannibalistically on other scorpions, which they locate with the aid of a highly developed sensitivity to kinetic stimuli (Polis 1990). Ground vibrations from walking or burrowing prey are picked up by cuticular hairs of the tarsus, the last segment on each leg, as well as by elongated slit-shaped organs on the adjoining segment that can feel faint substrate tremors originating up to 50 cm (20 in) away. The pattern of reception by the entire circular array of eight legs allows the scorpion to orient to the source. Scorpions also possess specialized hairs called trichobothria on their pedipalps (the two anterior appendages that bear the pincers, or chelae). In the presence of weak air currents, trichobothria sway, tripping sensory circuits at their base that signal the presence of light winds or the airy eddies thrown off by a nearby flying insect. As every trichobothrium moves in only one plane, the scorpion can "read" the direction of oncoming gusts even encased within its hard exoskeleton because of the particular pattern of nerve impulses generated by the affected trichobothria.

Ancient representations and ritual references to scorpions appear to invoke apotropaic forces that protect people against stings, but the curious reproductive behavior of scorpions seems also to have linked them with aspects of maternal care and treacherous sexuality. Mating scorpions engage in a strange dance, or *promenade à deux*, in which the two clasp pedipalps while the male leads the female about. The dance may last up to an hour or more and cover several meters until the male finds a suitable patch of ground to deposit a sticky spermatophore, over which he then pulls the female. Gestation among the Family Buthidae (which includes the three genera above) ranges from five to twelve months, and litter size varies from one to several dozen. Female scorpions bear live young, then protect and care for them until at least their first molt.

This image of romance and nurture must be tempered, however, by the grotesque habit of mate cannibalism. In a number of species, including the two yellow scorpions of the Near East, the larger of the breeding pair—usually the female—stings, kills, then consumes its partner subsequent to sperm uptake. The frequency of mate cannibalism is low, and in most cases, the smaller scorpion disengages abruptly to make a rapid postmating escape. Many scorpion populations display sex ratios skewed in favor of females, however, suggesting that cannibalism occurs with sufficient regularity to impose a demographic effect.

Like birds, fishes are generally poorly represented within archaeological bone assemblages, and it is difficult to determine whether their low frequency is due to the absence of fish in the ancient diet or a disproportionately greater destruction of their often small and fragile remains. Also like bird remains, those of fishes are frequently unidentifiable with accuracy to a particular species. But as in the case of birds, Egyptian art has provided vivid images of the piscine world of the Nile basin (Brewer and Friedman 1989). Though these representations do not illustrate the full spectrum of underwater life, and the scenes sometimes betray a misunderstanding on the part of the artists of the habitat and capture methods appropriate to the various taxa depicted, they confirm that the Egyptians possessed detailed ichthyological knowledge and exploited underwater life despite the paucity of faunal evidence. Other coastal and riverine peoples of southwestern Asia probably relied upon fishing to an extent that remains as yet unrecognized.

A number of Neolithic and Predynastic Egyptian sites have yielded fish remains, of which the most commonly represented species were perch, tilapia, and catfish (Brewer and Friedman 1989). Nile perch (*Lates niloticus*) of the Family Centropomidae are large fishes that occupy deep waters throughout the upper Nile basin and East African lakes (Hamblyn 1966; Hopson 1972). They prefer rocky, irregular bottoms having many sheltered recesses within which they can lie in wait for prey—usually smaller fishes. Today, perch are a valued market commodity obtained commercially using trammel-nets, but their popularity extends to sport fishing as well because of the fierce resistance they show to anglers. Sizes in excess of 75 kg (165 lb) are not uncommon, and one extraordinary specimen from Lake Nasser measured 2 m (6.5 ft) in length and weighed 175 kg (385 lb).

The Near East and northern Africa are home to some seventy recognized species of tilapia, but only three are found with any frequency in the lower Nile valley: Nile tilapia (*Oreochromis niloticus*), mango tilapia

(*Sarotherodon galilaeus*), and redbelly tilapia (*Tilapia zillii*). All are members of the Family Cichlidae (Trewavas 1983). Though they are not painted in sufficient detail to identify particular species, tilapia are among the most frequently represented fishes in tomb art, where they are commonly depicted foraging among the aquatic vegetation of their typical shallow water habitat, if they are not flopping about at the end of a bident spear held by an Egyptian fisherman. The Nile and mango tilapia range eastwards into the fresh water environments of Israel (Ben-Tuvia 1960), and both display a peculiar reproductive behavior known as mouth brooding. Eggs are laid in near-shore nests but are quickly taken by the female into her large buccal and pharyngeal cavities for safekeeping. Even after emerging, the hatchlings still retreat to the protection afforded by the mother's jaws if startled. Currently, tilapia account for the bulk of Egypt's fisheries production.

Smooth skinned and "bewhiskered" with several pairs of sensitive fleshy barbels projecting from the mouth, catfishes are unusual among Nilotic denizens not only in appearance but also in their choice of habitat: relatively shallow, muddy reaches of the river, with sometimes very poorly oxygenated water. Their endurance of conditions that would kill most other fishes is due to an accessory breathing organ that allows them to utilize oxygen directly from the air to supplement the inadequate dissolved amounts obtainable underwater. The two genera commonly found in the Nile are both members of the Family Clariidae, or air-breathing catfishes: mudfish (*Clarias anguillaris*), North African catfish (*C. gariepinus*), vundu (*Heterobranchus longifilis*), and ngaru (*H. bidorsalis*) (Teugels 1986; Teugels *et al.* 1990). Air breathing affords the additional freedom to become partially amphibious, especially among species of *Clarias*. Catfishes have been known to leave one body of water, portage themselves slowly across dry ground, and re-enter another part of the river system. Such overland odysseys permit them to relocate when marginal marshes into which they were dispersed by the rising floods gradually disappear with the receding water. Catfishes will also remain buried in mud as another survival strategy until renewed flow enters the distributary channels or shallows. It is very likely a species of *Heterobranchus* that formed half of the royal hieroglyphic name of King Narmer on the well-known palette recovered from his capital at Hierakonpolis.

The Muricidae are a family of globally distributed marine gastropods (Radwin and D'Attilio 1976), many of which display extravagantly shaped shells bearing numerous elongated projections (spines) and ridges

(varices). All are ravenous predators of the sea floor that feed on other mollusks by boring through their victim's shell with a multi-toothed rasp (radula) or prying open bivalves with the inexorable pull of their foot. Many of these shellfishes, collectively termed "murex," served from at least the second millennium B.C. as the source of rich textile dyes: the highly valued "royal" or "Tyrian purple" made famous by the Phoenicians (L.B. Jensen 1963). Each animal yields but a minuscule amount of dye (about 0.1 g), and so prodigious numbers of murex had to be collected and laboriously processed to produce commercially useful quantities of purple. Enormous piles of broken shells from muricids such as *Bolinus brandaris* and *Phyllonotus trunculus*, in addition to those from other, closely related sea snails such as *Thais haemastoma*, mark the shoreline locations of Levantine, Aegean, and North African industrial installations (Reese 1979/80; 1987; Herzog and Spanier 1987). The high costs of production raised the prices of dyed goods well into the luxury range, conveying for those who could afford such exorbitant expenses the image of high status and wealth (Reinhold 1970).

According to Pliny, dye makers harvested murex all along the Mediterranean littoral by luring them into submerged baskets baited with offal. Raised to the surface and amassed on the beach, the snails were smashed or perforated, and the combined secretions of their small hypobranchial gland rendered into deep hues ranging in color from various dark reds to bluish-violet. Emerging pale greenish-yellow from the living murex, the secretion changes color upon exposure to light, oxygen, and various salt solutions added as preservatives or mordants. Strabo and others affirmed that so vile a stench was released during the subsequent heating process that dye vats had to be situated downwind of settled communities. Chemically, the pigments used in the Mediterranean world were indigotin (bluish) and the brominated 6-6' dibromindigotin (purplish), all structurally related to natural indigo. The chromogenic precursors differ from species to species; *brandaris* and *haemastoma* contain the brominated form, while *trunculus* is characterized by both brominated and unbrominated. The resulting color depends primarily upon which murex is exploited and how the dye is processed (McGovern and Michel 1985, 1990). Dye production was also carried on along the Arabian Gulf, as indicated by the presence of middens containing thousands of shattered shells from the species *Thais savignyi* (Edens 1999).

CONCLUSION

The southwestern corner of Asia is a complex zoological transition zone and one of the most interesting biotic crossroads in the world. Across the Near East, temperate species of the north dovetail with arid subtropical species of the south, and overhead, millions of birds wing their way back and forth between summer and winter quarters. The Near East is also an intercontinental bottleneck for terrestrial fauna, a bridge between the huge land masses of Europe, Asia, and Africa. Until the cutting of the Suez Canal, the diminutive Sinai peninsula formed a narrow yet impenetrable oceanic barrier, a strip of dry land dividing marine life of Mediterranean and Red Seas (Por 1978).

Except for a few major climatic shifts, much of the environmental change in the Near East since the end of the Ice Age has occurred because of the actions of humans. The expansion of settlement and ever-increasing land use has restricted, or eliminated altogether, many habitats formerly occupied by the region's fauna. The modern era, with its industrialization fueled largely by a petroleum-based economy, has ultimately confined the world of most animals to tiny, scattered nature sanctuaries or to marginal, underdeveloped wilderness where the human presence is minimal. Though change is inevitable, the value of conserving the balance of nature goes beyond the practical considerations of not disturbing ecological systems. Living animals are able to demonstrate with their anatomy and behavior how they have adapted to the sometimes harsh conditions of the Near East. By knowing more about them, historians and archaeologists gain a deeper appreciation for the subsistence practices of antiquity as they relate to animal procurement, and perhaps with more time and study, they will also be able to infer more of the impact animal lore must have had on the organization of society, the technological innovations of husbandry, and the cultural perceptions that gave animate form to the supernatural forces believed to underlie all worldly phenomena.

NOTE

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Table 1.1. Indigenous Mammalian Fauna of the Post-Glacial Near East. IUCN[1] and CITES[2] Conservation status as of 2000.

Classification	Common Name	IUCN	CITES	Range in Near East
ORDER INSECTIVORA				
Family Erinaceidae (hedgehogs)				
Erinaceus concolor	East European hedgehog			Vegetated areas of Eurasia, as far S as Iran/Iraq & Israel
Hemiechinus auritis	long-eared hedgehog			Steppes & deserts Libya to Mongolia, often commensal
Paraechinus aethiopicus	desert hedgehog			Desert areas from N Africa to India
Paraechinus hypomelas	Brandt's hedgehog			Arid areas from Arabia to C Asia & Pakistan
Family Soricidae (shrews)				
Crocidura arabica	Arabian shrew			Coastal areas of Oman & Yemen
Crocidura dhofarensis	Dhofar shrew	CR		Oman
Crocidura floweri	Flower's shrew	EN		Egypt
Crocidura leucodon	bicolored white-toothed shrew	EN		Forests/grasslands of Europe & N East, occ. commensal
Crocidura olivieri	African giant shrew			Egypt, Sub-Saharan Africa
Crocidura pergrisea	pale gray shrew	VU		Mountains of Turkey to China
Crocidura religiosa	Egyptian pygmy shrew	DD		Egypt
Crocidura russula	greater white-toothed shrew	LR		Europe, N Africa, SW Asia to China
Crocidura suaveolens	lesser white-toothed shrew	LR		Forests/grasslands of Asia, N East, & N Africa
Crocidura susiana	Susiana shrew	EN		SW Iran
Crocidura zarudnyi	Zarudny's rock shrew			SE Iran, Afghanistan, W Pakistan
Neomys anomalus	Mediterranean water shrew	LR		Forests of Europe, N Turkey & Iran
Sorex caucasicus	Caucasian long-tailed shrew			Temperate N Turkey, Caucasus
Sorex raddei	Radde's shrew	LR		Temperate NE Turkey, Caucasus
Sorex volnuchini	Caucasian pygmy shrew	LR		Temperate Caucasus
Suncus etruscus	pygmy white-toothed shrew	LR		Forests/cultivated fields S Europe to C Asia, N Arabia
Suncus murinus	house shrew			E Africa & Egypt to SE China, including Arabia
Family Talpidae (moles)				
Talpa caeca	Mediterranean mole			S Europe, Turkey, Caucasus
Talpa caucasica	Caucasian mole			Caucasus
Talpa streeti	Persian mole	CR		NW Iran
ORDER CHIROPTERA				
Family Pteropodidae (fruit bats)				
Eidolon helvum	straw-colored fruit bat	LR		Africa, SW Arabia
Rousettus aegyptiacus	Egyptian rousette	LR		Sub-Saharan Africa, Egypt, Turkey to Pakistan
Family Rhinopomatidae (mouse-tailed bats)				
Rhinopoma hardwickei	lesser mouse-tailed bat	LR		N Africa, SW Arabia, Levant to Burma
Rhinopoma microphyllum	greater mouse-tailed bat	LR		N Africa, Arabia, Levant to India
Rhinopoma muscatellum	small mouse-tailed bat	LR		Oman, Iran to Afghanistan
Family Emballonuridae (sheath-tailed bats)				
Coleura afra	southern sheath-tailed bat	LR		SW Arabia, Sub-Saharan Africa
Taphozous nudiventris	naked rumped bat	LR		N Africa, SW Asia, Arabia, India
Taphozous perforatus	tomb bat	LR		Sub-Saharan Africa, Egypt, Arabia, S Asia
Family Nycteridae (slit-faced bats)				
Nycteris thebaica	Egyptian slit-faced bat	LR		Africa, Israel, Arabia

Table 1.1. Cont.

Classification	Common Name	IUCN	CITES	Range in Near East
Family Rhinolophidae (horseshoe bats)				
Rhinolophus blasii	Blasius's horseshoe bat	LR		Circum-Mediterranean, Arabia, Pakistan
Rhinolophus clivosus	Cretzschmar's horseshoe bat	LR		Africa, C & SW Asia
Rhinolophus euryale	Mediterranean horseshoe bat	VU		Circum-Mediterranean, SW Asia, C Asia
Rhinolophus ferrumequinum	greater horseshoe bat	LR		Europe, NW Africa, SW Asia, Afghanistan to Japan
Rhinolophus hipposideros	lesser horseshoe bat	VU		S Europe, N Africa, SW Asia
Rhinolophus lepidus	Blyth's horseshoe bat	LR		Afghanistan to S China & SE Asia
Rhinolophus mehelyi	Mehely's horseshoe bat	VU		Circum-Mediterranean, SW Asia, C Asia
Family Hipposideridae (leaf-nosed bats)				
Asellia tridens	trident bat	LR		N Africa, Arabia to N India
Hipposideros caffer	Sundevall's leaf-nosed bat	LR		Africa & SW Arabia
Hipposideros fulvus	fulvous leaf-nosed bat	LR		Afghanistan, Pakistan, India
Triaenops persicus	triple nose-leaf bat	LR		E Africa, SW Iran, S & W Arabia
Family Vespertilionidae (common night bats)				
Barbastella barbastellus	western barbastelle	VU		Eurasia, Circum-Mediterranean
Barbastella leucomelas	eastern barbastelle	LR		Caucasus, Iran, C Asia to E Asia
Eptesicus bobrinskoi	Bobrinsky's bat	LR		N Caucasus to C Asia
Eptesicus bottae	Botta's serotine	LR		SW Asia & C Asia
Eptesicus nasutus	Sind serotine bat	VU		Arabia to Pakistan
Eptesicus nilssoni	northern bat	LR		C Europe to Japan, Tibet
Eptesicus serotinus	serotine	LR		Europe, N Africa, SW Asia, N India to Korea
Miniopterus schreibersi	Schreiber's long-fingered bat	LR		Eurasia & Africa
Myotis bechsteini	Bechstein's bat	VU		Europe to Caucasus
Myotis blythi	lesser mouse-eared bat	LR		S Europe, N Africa & SW Asia to E Asia
Myotis capaccinii	long-fingered bat	VU		NW Africa, S Europe, Levant to C Asia
Myotis emarginatus	notch-eared bat	VU		NW Africa, S Europe, Turkey, Levant to Afghanistan
Myotis formosus	Hodgson's bat	LR		E Afghanistan to E Asia
Myotis longipes	Kashmir cave bat	VU		Afghanistan, India, SE Asia
Myotis muricola	Nepalese whiskered bat	LR		Afghanistan & N India to E & SE Asia
Myotis myotis	greater mouse-eared bat	LR		Europe, Turkey, Levant
Myotis mystacinus	whiskered bat	LR		Eurasia, including N Iran & Morocco
Myotis nattereri	Natterer's bat	LR		NW Africa, Europe, SW Asia to Japan
Myotis schaubi	Schaub's myotis	EN		Armenia, W Iran
Nyctalus lasiopterus	giant noctule	LR		Europe to the Urals, Iran, N Africa
Nyctalus leisleri	Leisler's bat	LR		Europe, E Afghanistan, Himalayas, N Africa
Nyctalus montanus	mountain noctule	LR		E Afghanistan, N India
Nyctalus noctula	common noctule	LR		NW Africa, Europe, SW Asia to N India, E Asia
Nycticeinops schlieffeni	Schlieffen's evening bat			N Africa, SW Arabia
Otonycteris hemprichi	Hemprich's long-eared bat	LR		N Africa, Arabia to Pakistan
Pipistrellus aegyptius	Egyptian pipistrelle	LR		N Africa, Egypt
Pipistrellus arabicus	Arabian pipistrelle	VU		Oman
Pipistrellus ariel	pygmy pipistrelle	VU		Sudan to Egypt, Israel
Pipistrellus bodenheimeri	Bodenheimer's pipistrelle	LR		Israel & Sinai to Aden
Pipistrellus coromandra	Indian pipistrelle	LR		E Afghanistan to E & SE Asia
Pipistrellus deserti	desert pipistrelle	LR		N Africa
Pipistrellus kuhlii	Kuhl's pipistrelle	LR		Africa, S Europe, SW Asia
Pipistrellus nathusii	Nathusius's pipistrelle	LR		Europe, W Turkey, Caucasus
Pipistrellus pipistrellus	common pipistrelle	LR		N Africa, Europe, SW Asia, Afghanistan to China
Pipistrellus rueppelli	Rüppell's bat	LR		Sub-Saharan Africa, Egypt to Iraq
Pipistrellus savii	Savi's pipistrelle	LR		NW Africa, S Europe, SW Asia, C Asia, S Asia

Table 1.1. Cont.

Classification	Common Name	IUCN	CITES	Range in Near East
Plecotus auritis	brown long-eared bat	LR		Europe to Japan, Himalayan area
Plecotus austriacus	gray long-eared bat	LR		Eurasia & N Africa
Scotophilus heathi	Asiatic greater yellow house bat	LR		Afghanistan to E & SE Asia
Vespertilio murinus	particolored bat	LR		Europe to SE Siberia, Afghanistan
Family Molossidae (free-tailed & mastiff bats)				
Chaerephon nigeriae	Nigerian lesser mastiff bat	LR		Sub-Saharan Africa, SW Arabia
Chaerephon pumila	little free-tailed bat	LR		Sub-Saharan Africa, Madagascar, SW Arabia
Mops midas	Midas greater mastiff bat	LR		Sahel to E Africa, Madagascar, SW Arabia
Tadarida aegyptiaca	Egyptian free-tailed bat	LR		Africa, Arabia to Pakistan, S Asia
Tadarida teniotis	European free-tailed bat	LR		Circum-Mediterranean, C Asia to E Asia
ORDER PRIMATES				
Family Cercopithecidae (Old World monkeys)				
Macaca mulatta	rhesus macaque	LR	II	E Afghanistan, along Himalayas & India, China, SE Asia
Papio hamadryas hamadryas	hamadryas baboon	LR	II	Sudan, Ethiopia, Somalia, SW Arabia
ORDER LAGOMORPHA				
Family Leporidae (hares, rabbits, pikas)				
Lepus capensis	cape hare			Eurasia & Africa
Ochotona curzoniae	black-lipped pika			E Iran, Himalayas, Tibet
Ochotona macrotis	large-eared pika			E Afghanistan to W China
Ochotona rufescens	Afghan pika			Mountains of S Turkmenistan, Iran, Afghanistan, Pakistan
ORDER RODENTIA				
Family Sciuridae (squirrels, marmots)				
Funambulus pennantii	palm squirrel	LR		SE Iran to India
Hylopetes fimbriatus	smaller Kashmir flying squirrel			Forested areas from Afghanistan to N India
Marmota caudata	long-tailed marmot	LR		Mountains of Afghanistan & C Asia to China
Petaurista petaurista	common giant flying squirrel	LR		Forested areas from Afghanistan to SE Asia
Sciurus anomalus	Syrian tree squirrel	LR		Forests of Turkey, Levant, W Iran to Caucasus
Spermophilopsis leptodactylus	long-clawed ground squirrel	LR		Sandy deserts, C Asia to Afghanistan
Spermophilus citellus	ground squirrel	VU		Grasslands, Europe to Caucasus & Levant
Spermophilus fulvus	fulvous ground squirrel	LR		Open woodland & steppe, C Asia to N Iran & Afghanistan
Family Castoridae (beavers)				
Castor fiber	beaver	LR		Forests of Eurasia, including SW Asia[3]
Family Muridae				
Subfamily Cricetinae (hamsters)				
Calomyscus bailwardi	mouse-like hamster	LR		Iran to Pakistan, C Asia
Cricetulus migratorius	rat-like hamster/gray hamster	LR		Steppes/deserts from SE Europe to W China, SW Asia
Mesocricetus auratus	golden hamster	EN		Steppes/fields in SE Europe, Turkey, Levant, N Iraq-Iran

Table 1.1. Cont.

Classification	Common Name	IUCN	CITES	Range in Near East
Subfamily Gerbillinae (gerbils, jirds, sand rats)				
Dipodillus simoni	short-tailed gerbil			Semiarid areas of coastal N Africa
Gerbillus allenbyi	Allenby's gerbil	VU		Coastal dunes of Israel
Gerbillus andersoni	Anderson's gerbil	LR		Sandy areas of Tunisia to Jordan
Gerbillus campestris	large N African gerbil	LR		N Africa
Gerbillus cheesmani	Cheesman's gerbil	LR		Sandy areas of Arabia to Afghanistan
Gerbillus dasyurus	Wagner's gerbil	LR		Rocky areas of Arabia to Egypt
Gerbillus famulus	black-tufted gerbil	LR		SW Arabia
Gerbillus floweri	Flower's gerbil	CR		Egypt
Gerbillus gerbillus	lesser Egyptian gerbil	LR		Sandy areas of the Sahara to Israel
Gerbillus henleyi	Henley's gerbil	LR		Desert areas of N Africa to W Arabia
Gerbillus mesopotamiae	Mesopotamian gerbil	LR		Tigris-Euphrates valley
Gerbillus nanus	Baluchistan gerbil	LR		Desert areas of N Africa to India
Gerbillus perpallidus	pygmy African gerbil	LR		NE Egypt
Gerbillus poecilops	large Aden gerbil	LR		SW Arabia
Gerbillus pyramidum	greater Egyptian gerbil	LR		Sandy areas of the Sahara to Israel
Meriones arimalius	Arabian jird	EN		Arabia
Meriones crassus	sand jird	LR		Arid areas of SW Asia & N Africa
Meriones dahli	Dahl's jird	EN		Armenia
Meriones hurrianae	Indian desert gerbil	LR		SE Iran to W India
Meriones libycus	Libyan jird	LR		Arid areas from Libya to W China
Meriones meridianus	midday gerbil	LR		Caspian region to N China
Meriones persicus	Persian jird	LR		E Turkey to Pakistan
Meriones rex	king jird	LR		SW Arabia
Meriones sacramenti	Buxton's jird	EN		Coastal dunes of Sinai and Israel
Meriones shawi	Shaw's jird			N Africa
Meriones tristrami	Tristram's jird	LR		Dry areas from Turkey & Israel to Iran
Meriones vinogradovi	Vinogradov's jird	LR		E Turkey, Syria, NW Iran
Meriones zarudnyi	Zarudny's jird	EN		NE Iran, N Afghanistan, S Turkmenistan
Pachyuromys duprasi	fat-tailed gerbil	LR		Stony deserts (hammadas) of N Africa
Psammomys obesus	fat sand rat	LR		Sandy areas in N Africa, Israel, Arabia
Rhombomys opimus	great jird	LR		Deserts from C Asia to Pakistan & Mongolia
Sekeetamys calurus	bushy tailed jird	LR		Rocky deserts of Egypt, S Levant, Arabia
Tatera indica	large naked-soled gerbil	LR		Syria to India
Subfamily Spalacinae (blind mole rats)				
Nannospalax ehrenbergi	Palestine mole rat	LR		NE Africa, Levant, Iraq
Nannospalax leucodon	lesser mole rat	VU		Balkans, Turkey, S Ukraine
Subfamily Microtinae (voles)				
Alticola roylei	Royle's high mountain vole	LR		Mountains of C Asia, Afghanistan to Mongolia
Arvicola terrestris	European water vole	LR		Streamside environments of Eurasia including SW Asia
Blanfordimys afghanus	Afghan vole	LR		Mountains of C Asia & Afghanistan
Blanfordimys bucharicus	Bucharian vole	LR		Afghanistan to C Asia
Chionomys gud	Caucasian snow vole	LR		Caucasus & Turkey, Russia
Chionomys nivalis	snow vole	LR		Mountains of Europe, Turkey to Caucasus & Iran, Levant
Chionomys roberti	Robert's vole	LR		Caucasus & NE Turkey
Ellobius fuscocapillus	mole-vole			Steppes of Turkey, Iraq to Pakistan, S Turkmenistan
Ellobius talpinus	northern mole-vole	LR		Steppes from Ukraine to Mongolia, N Afghanistan
Microtus arvalis	common vole	LR		Mountains of Eurasia
Microtus guentheri	Mediterranean vole	LR		SE Europe & S Russia to SW Asia
Microtus irani	Persian vole	LR		Levant to C Asia, Libya
Microtus juldaschi	Pamir vole	LR		Mountains of C Asia & NE Afghanistan

Table 1.1. Cont.

Classification	Common Name	IUCN	CITES	Range in Near East
Microtus kermanensis	Baluchistan vole	EN		Iran
Microtus majori	Major's pine vole	LR		Caucasus & Turkey
Microtus schelkovnikovi	Schelkovnikov's pine vole	LR		Elburz Mountains
Microtus socialis	social vole	LR		SE Europe to C Asia, Levant
Microtus transcaspicus	Transcaspian vole	LR		C Asia to N Afghanistan
Prometheomys schaposchnikowi	long-clawed mole-vole	LR		Caucasus & NE Turkey
Subfamily Murinae (rats, mice)				
Acomys cahirinus	common spiny mouse	LR		N & E Africa to Pakistan, Cyprus, often commensal
Acomys cilicicus	Cilician spiny mouse	CR		Turkey
Acomys nesiotes	Cyprus spiny mouse	DD		Cyprus
Acomys russatus	golden spiny mouse	LR		Egypt, Arabia, Levant
Apodemus arianus	Persian field mouse	LR		Levant to Iran
Apodemus flavicollis	common field mouse	LR		Eurasia
Apodemus hermonensis	Mt. Hermon field mouse	EN		N Israel
Apodemus microps/uralensis	pygmy field mouse	LR		E Europe to Turkey
Apodemus mystacinus	broad-toothed field mouse	LR		SE Europe, Levant-Iraq, Turkey-Caucasus, Aegean
Apodemus sylvaticus	wood or field mouse	LR		Europe to Himalayas, Afghanistan, NW Africa
Arvicanthis niloticus	kusu rat	LR		Nile delta, SW Arabia
Micromys minutus	Old World harvest mouse	LR		Eurasia, including Turkey
Mus musculus	house mouse	LR		Mediterranean to China
Mus musculus domesticus	house mouse	LR		Commensal worldwide
Mus spicilegus	steppe mouse	LR		Balkans, Turkey, Iran
Mus spretoides/macedonicus	Macedonian mouse	LR		Mediterranean climate areas of Levant and Balkans
Nesokia bunnii	Bunn's short-tailed bandicoot	LR		Iraq
Nesokia indica	bandicoot rat/oriental pest rat	LR		Egypt to W China, including N India
Praomys fumatus	African soft-furred rat	LR		E Africa & SW Arabia
Rattus norvegicus	brown rat	LR		Originally E Asia; introduced as commensal worldwide
Rattus rattoides	Turkestan rat	LR		C Asia to NE India
Rattus rattus	black rat	LR		S to E Asia; introduced as commensal worldwide
Family Gliridae (dormice)				
Dryomys laniger	woolly dormouse	LR		SW Turkey
Dryomys nitedula	forest dormouse	LR		Forested areas of Eurasia, Turkey, Iran, Levant
Eliomys melanurus	garden dormouse	LR		Turkey, N Africa, SW Asia, Arabia
Glis glis	fat dormouse	LR		Forested areas of Europe to Caspian & N Iran
Muscardinus avellanarius	hazel dormouse	LR		Forested areas of Europe, N Turkey
Myomimus personatus	mouse-like dormouse	VU		Balkans, Turkey, Caspian region of Iran, Levant[3]
Myomimus roachi	mouse-tailed dormouse	VU		Balkans, Turkey, Israel[3]
Myomimus setzeri	mouse-like dormouse	EN		W Iran
Family Dipodidae (jerboas)				
Alactagulus pumilio	lesser five-toed jerboa	LR		Steppe & desert NE Iran to China
Allactaga elater	small five-toed jerboa	LR		N Caucasus, C Asia, Iran
Allactaga euphratica	Euphrates jerboa	LR		Desert areas of Turkey & Syria E to Afghanistan

Table 1.1. Cont.

Classification	Common Name	IUCN	CITES	Range in Near East
Allactaga firouzi	Persian jerboa	CR		Arid areas of SW Iran
Allactaga hotsoni	Hotson's five-toed jerboa	LR		S Afghanistan, SE Iran, SW Pakistan
Allactaga tetradactyla	four-toed jerboa	EN		Coastal areas of Libya & Egypt
Dipus sagitta	rough-legged jerboa	LR		Sandy areas of the Caucasus & NE Iran to N China
Jaculus blanfordi	greater three-toed jerboa	LR		E Iran to Pakistan
Jaculus jaculus	lesser Egyptian jerboa	LR		Desert areas from N Africa to Iran
Jaculus lichtensteini	Lichtenstein's jerboa	LR		C Asia from SE Caspian to Lake Balkhash
Jaculus orientalis	greater Egyptian jerboa	LR		Desert areas of N Africa & S Levant
Jaculus turcmenicus	Turkmen jerboa	LR		C Asia from Caspian to Kyzyl Kum
Salpingotus thomasi	three-toed dwarf jerboa	DD		Afghanistan
Family Hystricidae (porcupines)				
Hystrix cristata	African porcupine	LR	III	N Africa, S Europe
Hystrix indica	Indian crested porcupine	LR		Turkey & Levant to C Asia, Arabia to India
ORDER CARNIVORA				
Family Canidae (wolves, foxes, jackals)				
Canis aureus syriacus	Syrian golden jackal	LR		SW Asia
Canis aureus lupaster	Egyptian golden jackal	LR		Egypt/Sinai
Canis lupus pallipes	gray wolf	LR	II	Eurasia
Canis lupus arabs	desert gray wolf	LR	II	N Arabian peninsula
Fennecus zerda	fennec	DD	II	Deserts of N Africa, Arabia
Vulpes cana	Blanford's fox	DD	II	Rocky areas in Egypt/Levant to Pakistan & C Asia
Vulpes corsac	corsac fox	DD		Steppes from lower Volga to N China, N Afghanistan
Vulpes rueppelli	sand fox/Rüppell's fox	DD		Desert of N Africa & SW Asia
Vulpes vulpes	red fox	LR		Eurasia & N Africa
Family Ursidae (bears)				
Ursus arctos	brown bear		II	Forests of Eurasia
Ursus thibetanus gedrosianus	Baluchistan black bear	CR	I	Forests of Afghanistan & SE Iran to Pakistan
Family Mustelidae (badgers, otters, weasels)				
Lutra lutra	Eurasian otter	VU	I	Watercourses of Eurasia
Lutra perspicillata	smooth coated otter	VU	II	Watercourses of S Iraq to SE Asia
Martes flavigula	yellow-throated marten			Siberia to SE Asia, Himalayan region to E Afghanistan
Martes foina	stone or beech marten	LR		Rocky open areas of Eurasia
Meles meles	Eurasian badger	LR		Forested areas of Eurasia
Mellivora capensis	honey badger, ratel		III	N Africa, SW Asia to India
Mustela erminea	ermine or stoat	LR	III	Eurasia, S to Afghanistan, Pakistan
Mustela nivalis	least weasel	LR		Europe, Turkey to Korea, Egypt
Poecilictis libyca	striped weasel			Desert margins of N Africa
Vormela peregusna	marbled polecat	VU		Semiarid areas from SE Europe & Levant to Mongolia
Family Viverridae (genets, mongooses)				
Genetta genetta	small spotted genet			Circum-Mediterranean, SW Arabia, Africa
Genneta plesictoides	Cyprus genet	EX		Post-glacial fossil remains from Cypriot locations

Table 1.1. Cont.

Classification	Common Name	IUCN	CITES	Range in Near East
Herpestes auropunctatus	small Indian mongoose			Iraq to E Asia
Herpestes edwardsi	gray Indian mongoose			E Arabia to S Asia
Herpestes ichneumon	Egyptian mongoose			S Iberia, Africa, Turkey, Israel
Ichneumia albicauda	white-tailed mongoose			S Arabia & Sub-Saharan Africa
Family Hyaenidae (hyenas)				
Crocuta crocuta	spotted hyena	LR		Open terrain in Levant & N Africa,[3] Sub-Saharan Africa
Hyaena hyaena	striped hyena	LR		Open terrain in S & SW Asia & N Africa
Family Felidae (wild cats)				
Acinonyx jubatus hecki	N African cheetah	EN	I	NW Africa, Egypt[3]
Acinonyx jubatus venaticus	Asiatic cheetah	CR	I	SW Asia
Felis bengalensis	leopard cat	LR	II	E & SE Asia, Afghanistan to Himalayan region
Felis caracal	caracal	LR	I	Africa, Levant/Arabia to C Asia & India
Felis chaus	jungle cat	LR	II	Egypt to China & SE Asia
Felis margarita	sand cat	LR	II	Desert from Morocco to C Asia
Felis silvestris libyca	African wild cat	LR	II	N Africa
Felis silvestris ornata	Asian wild cat	LR	II	SW Asia
Felis silvestris silvestris	European wild cat	LR	II	Eurasia
Lynx lynx	lynx	LR	II	Forested areas of Eurasia
Otocolobus manul	Pallas's cat/red manul	LR	II	Steppes of Caspian area to C Asia, Tibet
Panthera leo persica	Asiatic lion	CR	I	Open terrain of SW Asia,[3] India
Panthera pardus nimr	S Arabian leopard	CR	I	Arabia, S Levant
Panthera pardus tulliana	Anatolian leopard	CR	I	Turkey
Panthera pardus saxicolor	N Persian leopard	EN	I	Iran, Afghanistan, C Asia
Panthera tigris virgata	Caspian tiger	EX		E Turkey, Caspian, Afghanistan
Uncia uncia	snow leopard/ounce	EN	I	Mountains from Afghanistan to E Tibet
ORDER PINNIPEDIA				
Family Phocidae (seals)				
Monachus monachus	Mediterranean monk seal	CR	I	Mediterranean & Black[3] Seas, NW African coast
Phoca caspica	Caspian seal	VU		Caspian Sea
ORDER CETACEA[4]				
Family Balaenopteridae (rorqual whales)				
Balaenoptera acutorostrata	minke whale	LR	I	All oceans, including Mediterranean Sea & Arabian Gulf
Balaenoptera borealis	sei whale	EN	I	All oceans, including Arabian Gulf
Balaenoptera edeni	Bryde's whale	DD	I	Tropical oceans, including Arabian Gulf
Balaenoptera musculus	blue whale	EN	I	All oceans, including Arabian Gulf
Balaenoptera physalus	fin whale	EN	I	All oceans, including Mediterranean Sea & Arabian Gulf
Megaptera novaeangliae	humpback whale	VU	I	All oceans, including Arabian Gulf
Family Balaenidae (right whales)				
Eubalaena glacialis	northern right whale	EN	I	N American coasts, Pacific N of Korea, Atlantic coast of Europe[3] & Mediterranean Sea[3]
Family Kogiidae (pygmy sperm whales)				
Kogia simus	dwarf sperm whale	LR	II	Deep temperate/tropical oceans, including Gulf of Oman

Table 1.1. Cont.

Classification	Common Name	IUCN	CITES	Range in Near East
Family Physeteridae (sperm whales)				
Physeter macrocephalus/ catodon	sperm whale	VU	I	All oceans, including Mediterranean Sea & Arabian Gulf
Family Ziphiidae (beaked whales)				
Mesoplodon densirostris	Blainville's beaked whale	DD	II	All oceans, including rare sightings in Mediterranean Sea
Ziphius cavirostris	Cuvier's beaked whale	DD	II	Temperate/tropical oceans, including Mediterranean Sea
Family Platanistidae (river dolphins)				
Platanista minor/indi	Indus dolphin/susu	EN	I	Indus River and tributaries
Family Delphinidae (marine dolphins)				
Feresa attenuata	pygmy killer whale	DD	II	Tropical oceans
Globicephala macrorhynchus	short-finned pilot whale	LR	II	Tropical oceans, including Red Sea
Globicephala melas melas	northern long-finned pilot whale	LR	II	C & N Atlantic Ocean, including Mediterranean Sea
Orcinus orca	killer whale	LR	II	All oceans, incl. Mediterranean Sea
Pseudorca crassidens	false killer whale	LR	II	Tropical oceans, incl. Mediterranean & Red Seas, Arabian Gulf
Delphinus delphis	saddleback dolphin	LR	II	Tropical/temperate oceans, incl. Mediterranean, Black, & Red Seas, Arabian Gulf
Grampus griseus	Risso's dolphin	DD	II	Tropical/temperate oceans, incl. Mediterranean & Red Seas, Arabian Gulf
Sousa chinensis	Indo-Pacific humpback dolphin	DD	I	S coastal waters of Asia, incl. Red Sea & Arabian Gulf
Stenella attenuata	pantropical spotted dolphin	LR	II	Tropical oceans, incl. Red Sea & Arabian Gulf
Stenella coeruleoalba	striped dolphin	LR	II	Tropical/temperate oceans, incl. Mediterranean & Red Seas
Stenella longirostris	long-snouted spinner dolphin	LR	II	Tropical oceans, incl. Red Sea & Arabian Gulf
Steno bredanensis	rough-toothed dolphin	DD	II	Tropical oceans, incl. Mediterranean & Red Seas
Tursiops truncatus	bottle-nosed dolphin	DD	II	Tropical/temperate oceans, incl. Mediterranean, Black, & Red Seas, Arabian Gulf
Family Phocoenidae (porpoises)				
Neophocaena phocaenoides	finless porpoise	DD	I	Coasts of S Asia from Gulf of Oman to E Indies
Phocoena phocoena	harbor porpoise	VU	II	Temperate/subarctic oceans, incl. Mediterranean & Black Seas
ORDER PROBOSCIDEA				
Family Elephantidae (elephants)				
Elephas cypriotes	pygmy elephant	EX		Cyprus
Elephas maximus	Asian elephant	EN	I	Syria[3] to India-E Asia

Table 1.1. Cont.

Classification	Common Name	IUCN	CITES	Range in Near East
ORDER HYRACOIDEA				
Family Procavidae (hyraxes)				
Heterohyrax brucei	small-toothed rock hyrax	LR		SE Egypt to S Africa
Procavia capensis	hyrax/rock dassie/coney			Levant, Arabia, Africa
ORDER SIRENIA				
Family Dugongidae (dugongs)				
Dugong dugon	sea cow/dugong	VU	I	Indian Ocean to SE Asia, incl. Red Sea & Arabian Gulf
ORDER PERISSODACTYLA				
Family Equidae (asses, half-asses, horses)				
Equus africanus africanus	Nubian wild ass	CR	I	Grassland/steppe in N Africa, Arabia[3]
Equus africanus somaliensis	Somali wild ass	CR	I	Grassland/steppe in Somalia
Equus ferus ferus	tarpan	EX		Postglacial Turkey(?), Eurasian grassland/steppe
Equus hemionus onager	Persian wild ass/ghor-khar	EN	II	Grassland/steppe from Iran to Afghanistan
Equus hemionus hemippus	Syrian wild ass/achdari	EX		Grassland/steppe in Levant/ Mesopotamia
Equus hemionus khur	Indian wild ass/khur	EN	II	Grasslands/steppe in western India/ Pakistan
Equus hemionus kulan	Turkmenian wild ass/kulan	LR	II	Grassland/steppe of southern Turkmenistan
Equus hydruntinus	hydruntine	EX		Levant, Turkey
ORDER ARTIODACTYLA				
Family Suidae (pigs)				
Sus scrofa	wild boar			Densely vegetated areas of Eurasia, Egypt
Family Hippopotamidae (hippopotami)				
Hippopotamus amphibius	hippopotamus	LR	II	Levant,[3] Nile basin,[3] now S of Khartoum only
Phanourios minutus	pygmy hippopotamus	EX		Cyprus
Family Camelidae (camels)				
Camelus bactrianus/ferus	Bactrian camel	EN		Steppe/desert of N Iran/C Asia,[3] Mongolia, China
Camelus dromedarius	dromedary	EW		Arabian desert, now domestic only
Family Cervidae (deer)				
Capreolus capreolus	roe deer			Forests of Eurasia
Cervus elaphus bactrianus	Bactrian red deer	VU	II	Afghanistan, C Asia
Cervus elaphus marai	Caucasian red deer			Forests of Turkey, Iran, C Asia
Dama dama dama	European fallow deer			Europe; introduced nearly worldwide
Dama dama mesopotamica	Persian fallow deer	EN	I	Forests from Mediterranean to Iran, Cyprus, N Africa(?)
Moschus moschiferus	musk deer	VU		Forests from E Afghanistan along Himalayas to N China

Table 1.1. Cont.

Classification	Common Name	IUCN	CITES	Range in Near East
Family Bovidae				
Subfamily Bovinae (cattle, bison, buffaloes)				
Bison bison caucasicus	bison/wisent	EN		Mountain areas of Turkey to Iran,[3] Eurasia
Bos primigenius	aurochs	EW		Open forests/grasslands of Eurasia, N Africa
Bubalus arnee	water buffalo	EN	III	Iraq[3] to India, Nepal; intr. SW Asia as domestic *B. bubalis*?
Subfamily Hippotraginae (addax, hartebeest, oryxes)				
Addax nasomaculatus	addax	CR	I	Desert areas of N Africa
Alcelaphus buselaphus buselaphus	bubal hartebeest	EX		Grasslands of S Levant & Syria, & N Africa
Alcelaphus buselaphus tora	tora hartebeest	EN		Grasslands of NE Africa
Oryx dammah	scimitar oryx	EW	I	Desert areas of N Africa
Oryx leucoryx	Arabian oryx	EN	I	Desert areas of Arabia & Jordan (reintroduced)
Subfamily Antilopinae (gazelles)				
Gazella bennetti	chinkara gazelle	LR		Arid areas of E Iran to India
Gazella bilkis	Queen of Sheba gazelle	EX		Highlands of Yemen
Gazella dama	dama gazelle/addra gazelle	EN	I	Sahara, W of Nile
Gazella dorcas dorcas	dorcas gazelle	VU	III	Arid areas from W Egypt to Libya
Gazella dorcas isabella	isabella gazelle	VU	III	Arid areas of Sinai & S Israel, Aden, perhaps Jordan
Gazella erlangeri	Erlanger's gazelle			Aden & Saudi coast of Red Sea
Gazella gazella cora	Arabian mountain gazelle	LR		Arid areas of Arabia, Oman
Gazella gazella farasani	Farasan gazelle	VU		Arabia, Farasan Islands
Gazella gazella gazella	mountain gazelle/idmi	LR		Highlands of S Levant
Gazella leptoceros	slender-horned gazelle	EN	III	Sahara
Gazella muscatensis	Muscat gazelle	CR		Oman
Gazella rufifrons	red-fronted gazelle	VU		Semiarid/savanna areas S of Sahara
Gazella saudiya	Arabian gazelle	EW	III	Arid areas of Arabia
Gazella soemmerringi	Sömmerring's gazelle	VU		Semiarid areas in Horn of Africa
Gazella subgutturosa marica	sand gazelle/rhim	VU		Desert plains of Arabia
Gazella subgutturosa subgutturosa	goitered gazelle	LR		Semiarid areas E of Zagros, Azerbaijan
Subfamily Caprinae (sheep, goats)				
Ammotragus lervia blainei	Kordofan aoudad	VU	II	Rocky habitats in Libya & Sudan
Ammotragus lervia ornatus	Egyptian aoudad	EW	II	Rocky habitats in Egypt, E & W of Nile
Capra aegagrus aegagrus	Persian bezoar goat	VU		Mountains from Turkey to Afghanistan, Levant[3]
Capra aegagrus blythi	Pasang/Sind wild goat	VU		Mountains of Pakistan to Turkmenistan
Capra aegagrus chiltaniensis	Chiltan wild goat	CR		Mountains of Baluchistan
Capra caucasica	West Caucasian tur/Kuban tur	EN		W Caucasus Mountains
Capra cylindricornis	East Caucasian tur/Dagestan tur	VU		C & E Caucasus Mountains
Capra falconeri falconeri	flare-horned markhor	EN	I	Mountains of Pakistan & India
Capra falconeri heptneri	Tadjik markhor	CR	I	Mountains of Afghanistan to Turkmenistan
Capra falconeri megaceros	straight-horned markhor	EN	I	Mountains of Afghanistan & Pakistan
Capra ibex nubiana	Nubian ibex	EN		Mountains of S Levant, Arabia, NE Africa
Capra ibex sibirica	Siberian ibex/Asiatic ibex			Mountains of Afghanistan to Mongolia
Capra ibex walie	Walia ibex/Ethiopian ibex	CR		Central highlands of Ethiopia
Hemitragus jayakari	Arabian tahr	EN		Mountains of Oman

Table 1.1. Cont.

Classification	Common Name	IUCN	CITES	Range in Near East
Ovis ammon poli	Marco Polo argali	VU	II	High mountains of E Afghanistan, Pamirs
Ovis orientalis arkal	Transcaspian urial	VU	II	West of Caspian Sea to NE Iran
Ovis orientalis cycloceros	Afghan urial	VU	I	Afghanistan, W Pakistan, S Turkistan
Ovis orientalis gmelini	Armenian mouflon	VU		Grassy hills of Turkey, Caucasus, NE Iraq, NW Iran
Ovis orientalis isphahanica	Isfahan mouflon	VU		Mountains near Isfahan, Iran
Ovis orientalis laristanica	Laristan mouflon	VU		Arid mountains of SW Iran
Ovis orientalis ophion	Cypriot mouflon	EN	I	Cyprus (probably introduced)
Rupicapra rupicapra asiatica	Turkish chamois	DD		Turkey, S Europe
Rupicapra rupicapra caucasica	Caucasian chamois	VU		Caucasus, Azerbaijan
Tragelaphus imberbis	lesser kudu	LR		E Africa, Arabia[3]

[1] The International Union for the Conservation of Nature and Natural Resources (or IUCN) designates the following Red List conservation categories as of 2000:

- **EX** = **Extinct**: no reasonable doubt that the last individual of a species has died
- **EW** = **Extinct in the Wild**: species is known to survive only under husbanded, captive, or naturalized conditions, within or outside its original range
- **CR** = **Critically Endangered**: species is facing an extremely high risk of extinction in the wild in the immediate future
- **EN** = **Endangered**: species is facing a very high risk of extinction in the wild in the immediate future
- **VU** = **Vulnerable**: species is facing a high risk of extinction in the wild in the medium-term future
- **LR** = **Lower Risk**: species has been evaluated and does not fit any of the higher risk categories
- **DD** = **Data Deficient**: species has been evaluated in some way but sufficient data on abundance and distribution to categorize risk are lacking
- **NE** = **Not Evaluated**: species has not yet been assessed against risk criteria

[2] The Convention on International Trade in Endangered Species (or CITES) classifies commercially traded species into:

- **I** = **Appendix I**: all species threatened with extinction that are or may be affected by commercial trade
- **II** = **Appendix II**: all species that are not necessarily threatened with extinction but may become so unless commercial trade is subject to protective regulation
- **III** = **Appendix III**: all species that are subject to trade regulation by responsible authorities in order to prevent or control exploitation

[3] Locally extinct: species can no longer be located in the designated sector of its former range.

[4] Species belonging to the order Cetacea include widely-ranging marine mammals that are not considered indigenous to the Near East. Some frequent Near Eastern waters, but most are known only from occasional sightings.

Table 1.2. Recorded Avian Fauna of the Post-Glacial Near East.[1] Distribution data from 1950s–1990s. IUCN[2] and CITES[3] Conservation status as of 2000.

				Range in Near East[4]						
Classification	**Common Name**	**IUCN**	**CITES**	**CYP**	**TUR**	**EGY**	**LEV**	**ARAB**	**IQ/IN**	**AFG**
ORDER STRUTHIONIFORMES										
Family Struthionidae (ostriches)										
Struthio camelus camelus	North African ostrich		I			rb*				
Struthio camelus syriacus	Syrian ostrich	EX					frb	frb		
ORDER GAVIIFORMES										
Family Gaviidae (divers)										
Gavia arctica	black-throated diver				W		v		W*	
Gavia immer	great northern diver				v		v			
Gavia stellata	red-throated diver				W*	v	v		W*	
ORDER PODICIPEDIFORMES										
Family Podicipedidae (grebes)										
Podiceps auritus	horned grebe			v	W*		v	v	W*	
Podiceps cristatus	great crested grebe			m*/W*	rb/W	W#	m/W	W*	rb/W	m/W
Podiceps grisegena	red-necked grebe			v	mb/W*	v	v	v	mb/W*	
Podiceps nigricollis	black-necked grebe			m*/W	mb/W#	W#	m*/W	W	rb*/W	m/W
Tachybaptus ruficollis	little grebe/dabchick			m/W	rb#/mb#	rb/W	rb*/mb	rb/W	rb/W	
ORDER PROCELLARIIFORMES										
Family Diomedeidae (albatrosses)										
Diomedea cauta	shy albatross					v	v			
Family Procellariidae (shearwaters & petrels)										
Bulweria fallax	Jouanin's petrel	LR						S#		
Calonectris diomedea	Cory's shearwater			m*	m/S	m*/W*	m/W*	v	v	
Calonectris leucomelas	streaked shearwater						v	v		
Daption capense	cape petrel							v		
Pterodroma aterrima	mascarene petrel	CR					v			
Pterodroma feae	Cape Verde petrel/gon-gon	LR					v			
Pterodroma incerta	Atlantic petrel	VU					v			
Pterodroma mollis	soft-plumaged petrel						v			
Puffinus assimilis	little shearwater						v			
Puffinus carneipes	flesh-footed shearwater						v	S#		
Puffinus gravis	great shearwater						v			
Puffinus griseus	sooty shearwater					m*	m*/W*	v	v	
Puffinus pacificus	wedge-tailed shearwater							v		
Puffinus persicus	Persian shearwater	LR					v	rb/m	m	
Puffinus yelkouan	Mediterranean shearwater			m	rb/m#	m*	m/W			
Family Hydrobatidae (storm-petrels)										
Fregetta grallaria	white-bellied storm-petrel							v		
Fregetta tropica	black-bellied storm-petrel							S*		
Hydrobates pelagicus	European storm-petrel			v	v		v			
Oceanites oceanicus	Wilson's storm-petrel					v	v	v	v	
Oceanodroma castro	band-rumped storm-petrel						v			
Oceanodroma leucorhoa	Leach's storm-petrel					v	W*	v		
Oceanodroma monorhis	Swinhoe's storm-petrel	LR					v	v		
Pelagodroma marina	white-faced storm-petrel							S		
ORDER PELECANIFORMES										
Family Phaethontidae (tropicbirds)										
Phaethon aethereus	red-billed tropicbird					rb*	v	rb*	mb	
Family Sulidae (boobies & gannets)										
Morus bassana	northern gannet			W*		m*/W*	W*			
Sula dactylatra	masked booby							rb*		
Sula leucogaster	brown booby					rb*	d/m	rb*		
Sula sula	red-footed booby							v		

Table 1.2. Cont.

				Range in Near East[4]						
Classification	**Common Name**	**IUCN**	**CITES**	**CYP**	**TUR**	**EGY**	**LEV**	**ARAB**	**IQ/IN**	**AFG**
Family Phalacrocoracidae (cormorants)										
Phalacrocorax africanus	long-tailed cormorant					frb		v		
Phalacrocorax aristotelis	European shag			rb	rb	v	v		v	
Phalacrocorax carbo	great cormorant			m/W*	mb	m/W	m/W	W#	mb/W	b?/W
Phalacrocorax niger	little cormorant									v
Phalacrocorax nigrogularis	Socotra cormorant	VU				v	v	rb#	rb#	
Phalacrocorax pygmaeus	pygmy cormorant	LR		W*	rb/W		rb*/W*		rb*/W#	b?/m
Family Anhingidae (darters)										
Anhinga melanogaster	darter	LR			frb*	v	fW*		rb*/W*	
Family Pelecanidae (pelicans)										
Pelecanus crispus	Dalmatian pelican	LR	I	m*	mb/W*	W*	v		rb/W	
Pelecanus onocrotalus	great white pelican			m*	mb/m#	m#/W*	m#/W	m*/W*	mb/W	m/W?
Pelecanus rufescens	pink-backed pelican					m*/W*	v	rb#		
Family Fregatidae (frigatebirds)										
Fregata ariel	lesser frigatebird							v		
Fregata minor	great frigatebird							v?		
ORDER CICONIIFORMES										
Family Ardeidae										
Subfamily Botaurinae (bitterns)										
Botaurus stellaris	great bittern			m*/W*	rb/W	W*	m*/W	m*/W*	rb/W	b?/m
Ixobrychus minutus	little bittern			m	mb/m	rb/m	mb*/m#	m*	mb#	b?/m
Subfamily Ardeinae (herons)										
Ardea cinerea	grey heron			m#/W	rb/m	m#/W#	m#/W#	m#/W#	rb#/W	m/W
Ardea goliath	Goliath heron		III			rb*/m*	v	rb/W*	frb*	
Ardea melanocephala	black-headed heron						v	v		
Ardea purpurea	purple heron			m#	mb/m	m#/W*	mb/m#	m*/W	mb/W	b?/m
Ardeola grayii	Indian pond-heron							W*	rb*	
Ardeola ralloides	squacco heron			m#	mb/m	rb*/m	mb*/m#	mb*/m#	mb/W	
Bubulcus ibis	cattle egret		III	m*	mb	rb#/m	rb#/m*	m#/W#	mb	
Butorides striatus	green-backed heron					rb/m*	m/d	rb*	rb	
Egretta/Casmerodius alba	great white egret		III	m*/W*	mb/W	m*/W*	m*/W#	m*/W*	m/W	m/W
Egretta ardesiaca	black heron						v	rb	rb	
Egretta garzetta	little egret		III	m#/W*	mb	rb*/m	rb/m	m#/W*	mb/W	b?
Egretta gularis	western reef egret					rb*	d	rb#	rb	
Mesophoyx intermedia	intermediate egret						v	v		
Nycticorax nycticorax	black-crowned night heron			mb*/m	mb/m	m/W	rb/m	m*/W*	mb/m	b?/W
Family Scopidae (hammerkops)										
Scopus umbretta	hammerkop							rb#		
Family Balaenicipitidae (whale-headed storks)										
Balaeniceps rex	whale-headed stork	LR	II			frb?				
Family Ciconiidae (storks)										
Ciconia abdimii	Abdim's stork							mb*		
Ciconia ciconia	white stork			m	mb/m#	m#	m#/W	m*/W	mb#/W	m*
Ciconia episcopus	woolly-necked stork								v	
Ciconia nigra	black stork		II	m*	mb*/m	m*	m#/W*	m*/W*	mb/m	b?/m
Ephippiorhynchus senegalensis	saddle-billed stork		III			frb				
Leptoptilos crumeniferus	Marabou stork						v			
Mycteria ibis	yellow-billed stork				v	S*	v			
Family Threskiornithidae (ibises & spoonbills)										
Geronticus eremita	waldrapp	CR	I		fmb	v	m*	m*	v	
Platalea alba	African spoonbill							v		
Platalea leucorodia	Eurasian spoonbill		II	m*	mb/m	rb*/m*	m#/W#	rb	rb/W	m/W
Plegadis falcinellus	glossy ibis			m#/S*	mb/m	m/W*	m/W*	m*/W*	mb/W*	b?/m
Threskiornis aethiopicus	sacred ibis		III			frb	v	v	rb*	

Table 1.2. Cont.

Classification	Common Name	IUCN	CITES	Range in Near East[a] CYP	TUR	EGY	LEV	ARAB	IQ/IN	AFG
ORDER PHOENICOPTERIFORMES										
Family Phoenicopteridae (flamingos)										
Phoenicopterus minor	lesser flamingo	LR	II	|				rb*	v	v
Phoenicopterus ruber	greater flamingo		II	|m#/W#	mb/W	rb*/m	m*/W*	m*/W*	mb/W	m*/W
ORDER ANSERIFORMES										
Family Anatidae										
Subfamily Anserinae										
Tribe Dendrocygnini (whistling ducks)										
Dendrocygna javanica	lesser whistling-duck			|			v			
Tribe Anserini (swans & geese)										
Anser albifrons	greater white-fronted goose			|W*	W/S*	W*	W*	W*	W#	m*
Anser anser	greylag goose			|W*	rb/W	v	W*	W*	rb*/W	m*
Anser brachyrhynchus	pink-footed goose			|	v					
Anser erythropus	lesser white-fronted goose	VU		|	v	v	v	v	W	
Anser fabalis	bean goose			|v	W	v	v		W	
Anser indicus	bar-headed goose			|						b?/m
Branta bernicla	Brent goose			|v	v	v				
Branta leucopsis	barnacle goose			|	v	v				
Branta ruficollis	red-breasted goose	VU	II	|v	W*	v	v		W*	
Cygnus columbianus	Bewick's swan			|	W*		v	v	W*	
Cygnus cygnus	whooper swan			|v	W	v	v		W	W
Cygnus olor	mute swan			|W*	mb*/W	W*	m*/W*	v	W	b?/W
Subfamily Anatinae										
Tribe Tadorini (sheldgeese & shelducks)										
Alopochen aegyptiacus	Egyptian goose		III	|W*		rb#/W	v	v		
Tadorna ferruginea	ruddy shelduck			|W*	rb/W	m*/W*	m*/W*	W*	rb/W	b?/m
Tadorna tadorna	common shelduck			|m/W#	rb*/W	W	m/W	W*	rb*/W*	b?/m
Tribe Anatini (dabbling ducks)										
Anas acuta	northern pintail		III	|m#/W#	rb*/W#	m/W	m/W#	W#	m/W	m#/W
Anas capensis	cape teal		III	|		v	v			
Anas clypeata	northern shoveler		III	|m#/W#	m#/W#	m#/W#	m#/W#	m#/W#	m/W	m/W
Anas crecca	common teal		III	|m*/W#	rb*/W#	m#/W#	m#/W#	m#/W#	m/W#	m/W#
Anas erythrorhyncha	red-billed duck			|			v			
Anas falcata	falcated duck			|	v		v		v	v
Anas formosa	Baikal teal	VU	II	|						?
Anas penelope	European wigeon		III	|m#/W#	m/W#	m#/W#	m#/W#	W	W#	W
Anas platyrhynchos	mallard			|m#/W#	rb/W#	m/W#	m/W#	W*	rb/W#	m/W
Anas querquedula	garganey		III	|m#	mb*/m	m#	m#/W*	m#/W*	m/W	b?/m
Anas strepera	gadwall			|m*/W*	rb*/W	m*/W*	m*/W*	W*	rb*/W	m/W
Marmaronetta angustirostris	marbled teal	VU		|fb/m*	rb*/W*	rb*/W*	rb*/W	v	rb/W*	b?/m
Tribe Somaterini (eiders)										
Somateria mollissima	common eider			|	v		v			
Tribe Aythyini (pochards & scaups)										
Aythya ferina	common pochard			|m/W	rb/W#	m#/W#	m#/W#	m#/W#	rb*/W	m/W
Aythya fuligula	tufted duck			|m/W*	m/W	m#/W#	m#/W#	W#	m/W	m/W
Aythya marila	greater scaup			|v	W*		v		W*	
Aythya nyroca	ferruginous pochard	LR	III	|m*/W*	rb/W	m/W	m*/W*	v	mb*/W*	m/W
Netta rufina	red-crested pochard			|W*	rb#/W	W*	m*/W	W*	W*	m/W
Tribe Cairinini (perching ducks)										
Nettapus coromandelianus	cotton pygmy-goose				|				v	W*
Sarkidiornis melanotos	comb duck		II	|				v		
Tribe Mergini (sea-ducks)										
Bucephala clangula	common goldeneye			|v	W*		v		W*	m/W
Clangula hyemalis	long-tailed duck			|	v		v		v	
Melanitta fusca	velvet scoter			|v	mb/W	v	v			
Melanitta nigra	black scoter			|v	v					
Mergus albellus	smew			|v	W*	W*	v	v	W*	m*/W
Mergus merganser	common merganser/goosander			|v	W*		v		W*	b?
Mergus serrator	red-breasted merganser			|W*	W*	W*	m*/W		W*	W*
Tribe Oxyurini (stifftails)										
Oxyura leucocephala	white-headed duck	EN	II	|m*/W*	rb/W	W*	W*	v	mb/W	b?/W

Table 1.2. Cont.

Classification	Common Name	IUCN	CITES	Range in Near East[a] CYP	TUR	EGY	LEV	ARAB	IQ/IN	AFG
ORDER ACCIPITRIFORMES										
Family Accipitridae (eagles, buzzards, vultures, hawks, kites, & harriers)										
Accipiter badius	shikra		II				v	rb*	mb/W	b?/m
Accipiter brevipes	Levant sparrowhawk		II	m*	mb*/m#	m	m#/W*	m*	mb/m*	
Accipiter gentilis	northern goshawk		II	rb*/W*	rb*	W*	m*/W*	W*	rb/W*	
Accipiter nisus	Eurasian sparrowhawk		II	m*/W*	rb/m#	m/W*	m/W#	m*/W*	rb#/W#	b?/m
Aegypius monachus	cinereous vulture	LR	II	rb*	rb*	m*/W*	m*/W*	W*	rb*/m*	m/W?
Aquila chrysaetos	golden eagle		II	v	rb#	rb*	rb	rb*/W*	rb	rb?
Aquila clanga	greater spotted eagle	VU	II	v	m*/W*	m*/W*	m*/W*	W*	m*/W*	m/W?
Aquila heliaca	imperial eagle	VU	I	rb*	rb*/mb*	m*/W*	m*/W	W*	rb*/W	W
Aquila nipalensis	steppe eagle		II		mb*/m	m/W*	m#/W*	m#/W#	m/W	m/W?
Aquila pomarina	lesser spotted eagle		II	m*	mb*/m	m/W*	m#/W*	m*	mb	
Aquila rapax	tawny eagle		II			v	v	rb*	rb*	?
Aquila verreauxii	Verreaux's eagle		II			rb*	rb	rb*		
Butastur teesa	white-eyed buzzard		II						rb	
Buteo buteo	common buzzard		II	m#/W*	rb/m#	m	m#/W	m*	rb/W	m
Buteo lagopus	rough-legged buzzard		II	v	W*		v		W*	
Buteo rufinus	long-legged buzzard		II	W*	rb#/W#	rb*/m*	rb/W#	rb*	rb#/W	b?/m
Chelictinia riocourii	African swallow-tailed kite		II					v		
Circaetus gallicus	short-toed snake-eagle		II	m*	mb/m#	rb*/m#	m#/W*	m*/W*	mb/m	m
Circus aeruginosus	western marsh-harrier		II	m*/W*	rb/mb#	m*/W*	m#/W*	m#	rb/mb	m/W
Circus cyaneus	northern harrier		II	m/W	m#/W#	m*/W*	m*/W*	m*/W*	m/W	m/W
Circus macrourus	pallid harrier	LR	II	m	m*	m*/W*	m#/W*	m#	mb/W*	m/W
Circus pygargus	Montagu's harrier		II	m*	mb/m	m*/W*	m#/W*	m*	mb/m	m
Elanus caeruleus	black-winged kite		II		v	rb	v	rb		?
Gypaetus barbatus	lammergeier		II	v	rb	rb*/m*	rb*	rb*	rb	rb
Gyps bengalensis	Oriental white-backed vulture	CR	II						rb*	v
Gyps fulvus	Eurasian griffon		II	rb/W	rb/mb	m*/W*	rb/m*	rb#	rb/mb	b?/W
Gyps rueppellii	Rüppell's griffon		II			m*		rb*?		
Haliaeetus albicilla	white-tailed eagle	LR	II	v	rb*/W	W*	m*/W*		rb/W	m/W?
Haliaeetus leucorhyphus	Pallas's sea-eagle	VU	II				v	v	v	W?
Haliaeetus vocifer	African fish-eagle		II			v				
Haliastur indus	Brahminy kite		II					v		
Hieraaetus fasciatus	Bonelli's eagle		II	rb*/m*	rb*	rb*/m*	rb/m*	m*	rb	?
Hieraaetus pennatus	booted eagle		II	m*	mb/m	m*/W*	m#/W*	m*	mb/m	b?
Melierax metabates	dark chanting-goshawk		II				v	rb*		
Micronisus gabar	gabar goshawk		II			v		rb*		
Milvus migrans	black kite		II	m	mb*/m	rb*/m	m#/W#	rb/m#	mb/W	mb/m
Milvus milvus	red kite	LR	II	v	m*/W*	m*	m*/W*	v	m*/W*	
Neophron percnopterus	Egyptian vulture		II	m*	mb#/m	rb/m*	mb*/m#	rb#/m	mb/m	rb/mb
Pernis apivorus	European honey-buzzard		II	m#	mb/m#	m/W*	m#	m*	mb/m	
Pernis ptilorhyncus	Oriental honey-buzzard		II				v	v		
Terathopius ecaudatus	bateleur		II			rb*	v	rb*	v	
Torgos tracheliotus	lappet-faced vulture	VU	II			rb*	rb*	rb*/W*		
Family Pandionidae (ospreys)										
Pandion haliaetus	osprey		II	m*	m*/W*	rb/m*	m/W*	rb#	mb/W	m
ORDER FALCONIFORMES										
Family Falconidae (falcons)										
Falco amurensis	Amur falcon		II					m*		
Falco biarmicus	lanner falcon		II	v	rb*/m*	rb*/W*	rb/W*	rb*	rb*	
Falco cherrug	saker falcon		II	m/W*	rb*/m*	m*/W*	m*/W*	m*/W*	rb/W	b?
Falco chicquera	red-necked falcon	LR	II						rb	
Falco columbarius	merlin		II	m*/W*	m/W	W*	m*/W	W*	W	m/W
Falco concolor	sooty falcon		II	v	v	mb*	mb*/m*	rb*	v	
Falco eleonorae	Eleonora's falcon		II	mb	mb*/m*	m*	m*			
Falco jugger	laggar falcon		I							b?
Falco naumanni	lesser kestrel	VU	II	m/W*	mb#/W*	rb*/m	mb/m#	m*/W*	mb/m	m
Falco pelegrinoides	Barbary falcon		I			rb*	rb	rb*	rb#/W	b?
Falco peregrinus	peregrine falcon		I	rb/m	rb/m	m*/W*	m*/W	m*/W*	rb/W	b?
Falco subbuteo	Eurasian hobby		II	m#	mb#/m	mb*/m*	mb/m	m*	mb/m	mb*/m
Falco tinnunculus	common kestrel		II	rb#/m#	rb#/m	rb/W	rb#/W	rb/m#	rb#/m	rb/m
Falco vespertinus	red-footed falcon		II	m#	m	m*	m		v	?

Table 1.2. Cont.

Classification	Common Name	IUCN	CITES	Range in Near East[a] CYP	TUR	EGY	LEV	ARAB	IQ/IN	AFG
ORDER GALLIFORMES										
Family Phasianidae										
Subfamily Tetraoninae (grouse)										
Tetrao mlokosiewiczi	Caucasian grouse	DD			rb				rb	
Tetrao tetrix	black grouse				frb					
Subfamily Phasianinae (partridges, pheasants, & quails)										
Alectoris barbara	Barbary partridge					rb*				
Alectoris chukar	chukar			rb#	rb	rb	rb#	rb*	rb	rb
Alectoris graeca	rock partridge									rb
Alectoris melanocephala	Arabian partridge							rb#		
Alectoris philbyi	Philby's partridge							rb#		
Ammoperdix griseogularis	see-see partridge				rb*				rb#	rb
Ammoperdix heyi	sand partridge					rb#	rb#	rb#		
Coturnix coturnix	common quail			m	mb/W*	rb*/m#	m#/W*	mb/m*	mb/W	mb/m
Coturnix delegorguei	harlequin quail							mb*		
Francolinus francolinus	black francolin			rb	rb		rb#	rb*	rb#	rb
Francolinus pondicerianus	grey francolin								rb	rb*
Lophophorus impejanus	Himalayan monal		I							rb
Pavo cristatus	Indian peafowl							rbi*	rbi	
Perdix perdix	grey partridge				rb*				rb*	
Phasianus colchicus	common pheasant				rb				rb	rb
Pucrasia macrolopha	koklass pheasant									rb
Tetraogallus caspius	Caspian snowcock		I		rb				rb*	
Tetraogallus himalayensis	Himalayan snowcock									rb
Subfamily Numidinae (guineafowl)										
Numida meleagris	helmeted guineafowl					frb		rb*		
ORDER GRUIFORMES										
Family Rallidae (rails)										
Amauromis phoenicurus	white-breasted waterhen							m*/W*		
Crex crex	corn crake	VU		m	mb/m	m*	m*	m*	mb*	mb/m?
Fulica atra	common coot			m/W	rb/W	rb*/W#	m#/W#	W#	rb/mb	rb/W
Gallicrex cinerea	watercock							v		
Gallinula angulata	lesser moorhen							v		
Gallinula chloropus	common moorhen			m/W	rb/W	rb#/m#	rb#/W	rb#/m	rb/W	b?/W?
Porphyrio porphyrio	purple gallinule			v	rb	rb	v	v	rb	rb/W?
Porphyrula alleni	Allen's gallinule			v		v		v		
Porzana parva	little crake			m	m/W	m*/W*	m#/W*	m*	m	m
Porzana porzana	spotted crake			m*	m	m/W*	m*/W*	m*/W*	mb/W	m
Porzana pusilla	Baillon's crake			m*	mb/m	rb*/m*	m*/W*	m*/W	mb*/W	b?/m
Rallus aquaticus	water rail			m#/W#	rb	rb/W#	m/W#	rb*/W	rb/W	?
Family Turnicidae (buttonquails)										
Turnix sylvatica	small buttonquail							rb*	v	
Family Gruidae (cranes)										
Anthropoides virgo	demoiselle crane		II	m	mb*	m*/W*	m*	m#	m*	m
Balearica regulorum	grey-crowned crane		II					rbi		
Grus grus	common crane		II	m#	rb/m	m/W*	m/W#	m*	m/W	m/W?
Grus leucogeranus	Siberian crane	CR	I		v				m/W*	m?
Family Otididae (bustards)										
Ardeotis arabs	Arabian bustard		II					rb*		
Chlamydotis undulata	Houbara bustard	LR	I	v	rb*	rb*/W*	rb#	rb/W*	mb/W	b?/m
Otis tarda	great bustard	VU	II	W*	mb/W*	v	W*	v	mb*/W*	W
Tetrax tetrax	little bustard	LR	II	W*	rb*/W*	v	m*/W*	v	rb/W*	m/W
ORDER CHARADRIIFORMES										
Family Jacanidae (jacanas)										
Hydrophasianus chirurgus	pheasant-tailed jacana							m*/W*		
Family Rostratulidae (painted-snipes)										
Rostratula benghalensis	greater painted-snipe					rb	v	v		
Family Haematopodidae (oystercatchers)										
Haematopus ostralegus	Eurasian oystercatcher			m*	mb/W*	m*/W*	m*/W*	m/W	mb*/W*	b?/m?

Table 1.2. Cont.

				Range in Near East[a]						
Classification	**Common Name**	**IUCN**	**CITES**	**CYP**	**TUR**	**EGY**	**LEV**	**ARAB**	**IQ/IN**	**AFG**
Family Recurvirostridae (avocets & stilts)										
Himantopus himantopus	black-winged stilt			mb*/m#	mb#/m	mb*/m#	m#/W#	m#/W*	rb/mb	b?/m
Recurvirostra avosetta	pied avocet			m/W*	mb/m	rb*/W	m#/W#	m*/W*	rb*/W	b?/m
Family Dromadidae (crab plovers)										
Dromas ardeola	crab plover				v	W*	v	rb#	rb#	
Family Burhinidae (thick-knees)										
Burhinus capensis	spotted thick-knee							rb*		
Burhinus oedicnemus	Eurasian thick-knee/stone curlew			rb*/m	mb/m	rb/m	rb#/W#	m*/W	mb/W	b?
Burhinus senegalensis	Senegal thick-knee					rb		v		
Esacus recurvirostris	great stone plover							v	rb	
Family Glareolidae (coursers & pratincoles)										
Cursorius cursor	cream-colored courser			m*	m*/W*	rb/m	mb/m#	rb/W	mb/W	mb/m
Glareola lactea	small pratincole							W*		?
Glareola maldivarum	oriental pratincole			v				v		
Glareola nordmanni	black-winged pratincole	DD		m*	mb*/m	m*	m	m*	m*	
Glareola pratincola	collared pratincole			m/fb	mb/m	mb/m#	mb/m#	m#	mb	?
Pluvianus aegyptius	crocodile-bird/Egyptian plover					frb/v	v			
Family Charadriidae										
Subfamily Charadriinae (plovers)										
Charadrius alexandrinus	Kentish plover			mb/m	rb/mb	rb/W	m#/W#	rb#/W#	rb*/mb*	b?/m
Charadrius asiaticus	Caspian plover			v	m*	m*	m*	m*/W*	m/W*	
Charadrius dubius	little ringed plover			m#	mb/m	mb*/m*	mb*/m	m#/W*	mb	mb/m
Charadrius hiaticula	common ringed plover			m/W*	m/W	m/W	m#/W#	m#/W#	m	
Charadrius leschenaultii	great sand plover			m/W*	mb/m	m/W	mb/m#	m#/W#	mb*/W	b?
Charadrius mongolus	Mongolian sand plover				v	m*	v	m#/W#	m/W	m
Charadrius pecuarius	Kittlitz's sand plover			v		rb*	W*	v		
Eudromias morinellus	Eurasian dotterel			m*	m/W*	W*	m*/W*	m*/W	m/W*	
Pluvialis apricaria	Eurasian golden-plover			W	m/W	W*	m*/W	m*	W*	
Pluvialis dominica	American golden-plover				v			m*/W*		v
Pluvialis fulva	Pacific golden-plover			v	v	v	v	m/W	v	
Pluvialis squatarola	grey plover			m*/W*	m/W	m/W*	m#/W*	m#/W#	m/W	
Subfamily Vanellinae (lapwings)										
Vanellus gregarius	sociable lapwing	VU		v	m*	m*/W*	m*/W*	m*/W*	m*/W*	m
Vanellus indicus	red-wattled lapwing				rb*/d		v	rb*/m*	rb/d	b?
Vanellus leucurus	white-tailed lapwing			m*	mb	m*/W*	m*/W*	m*/W*	rb/mb	b?/W
Vanellus spinosus	spur-winged lapwing			m	mb/m	rb/m	rb#/m	rb/m*	rb*/m	
Vanellus tectus	black-headed plover						v			
Vanellus vanellus	northern lapwing			m*/W#	rb/W	m/W	m/W#	W*	rb/W	m/W
Family Scolopacidae										
Subfamily Tringinae (godwits, curlews, & other sandpipers)										
Limosa lapponica	bar-tailed godwit			m*	m*/W*	m*/W*	m*/W*	m#/W#	m*/W*	
Limosa limosa	black-tailed godwit			m/W*	m#/W	m/W*	m#/W#	m*/W*	m/W	m/W
Numenius arquata	Eurasian curlew			m*/W*	m#/W#	m*/W*	m*/W*	m#/W#	m/W	m/W
Numenius madagascariensis	Far Eastern curlew	LR							v	
Numenius phaeopus	whimbrel			m*	m/W*	m*/W*	m*/W*	m#/W*	m#/W#	
Numenius tenuirostris	slender-billed curlew	CR	I	v	v	v	v	v	v	
Tringa erythropus	spotted redshank			m	m#/W	m/W*	m/W	m*/W*	m/W#	
Tringa flavipes	lesser yellowlegs						v			
Tringa glareola	wood sandpiper			m#	m#/W*	m/W*	m#/W*	m#/W*	m/W*	m/W
Tringa hypoleucos	common sandpiper			m#/W*	mb/m#	m/W*	m#/W*	m#/W	mb/m#	mb/m
Tringa macularia	spotted sandpiper	LR			v					
Tringa nebularia	common greenshank			m/W*	m#/W*	m/W*	m#/W*	m#/W*	m/W*	m/W
Tringa ochropus	green sandpiper			m/W*	m#/W#	m/W*	m#/W#	m#/W*	m/W*	m/W
Tringa stagnatilis	marsh sandpiper			m	m/W*	m*/W*	m#/W*	m*/W*	m/W*	?
Tringa totanus	common redshank			m/W	rb#/m	m/W	m#/W#	m#/W#	rb/W	m/W
Tryngites subruficollis	buff-breasted sandpiper	LR			v	v		v		
Xenus cinereus	Terek sandpiper			v	m*	m*	m*	m#/W	m#/W	
Subfamily Arenariinae (turnstones)										
Arenaria interpres	ruddy turnstone			m*	m/W*	m*/W*	m#/W*	m#/W*	m/W	
Subfamily Phalaropodinae (phalaropes)										
Phalaropus fulicarius	red phalarope				v	m*/W*	m*/W*	m*/W*	m*/W*	
Phalaropus lobatus	red-necked phalarope			m*	m	m*	m*	m*/W*	m#	m
Steganopus tricolor	Wilson's phalarope				v			v		

Table 1.2. Cont.

Classification	Common Name	IUCN	CITES	Range in Near East[c] CYP	TUR	EGY	LEV	ARAB	IQ/IN	AFG
Subfamily Scolopacinae (woodcocks)										
Scolopax rusticola	Eurasian woodcock			W#	m*/W*	W*	W#	W*	W	m/W
Subfamily Gallinaginiinae (snipes & dowitchers)										
Gallinago gallinago	common snipe			m/W	m#/W	m/W	m#W#	m#/W#	m/W	m/W
Gallinago media	great snipe	LR		m/W*	m*	m*/W*	m*	m*/W*	m*	
Gallinago solitaria	solitary snipe							v	m*	W*
Gallinago stenura	pintail snipe						v	m*/W*	m*/W*	
Limnodromus scolopaceus	long-billed dowitcher						v	v		
Limnodromus semipalmatus	Asiatic dowitcher	LR						v		
Lymnocryptes minimus	jack snipe			m*/W*	m/W*	m*/W*	m*/W*	m*/W*	m*/W	m/W
Subfamily Calidridinae (arctic sandpipers & allies)										
Calidris acuminata	sharp-tailed sandpiper							v		
Calidris alba	sanderling			m/W*	m*/W*	m/W	m#/W*	m#/W#	m/W	m
Calidris alpina	dunlin			m/W	m#/W#	m#/W#	m#/W#	m#/W#	m/W	m/W
Calidris bairdii	Baird's sandpiper							v		
Calidris canutus	red knot			m*	m*	m*/W*	m*		m*	
Calidris ferruginea	curlew sandpiper			m	m	m/W*	m#/W*	m#/W*	m#	
Calidris melanotos	pectoral sandpiper						v	v		
Calidris minuta	little stint			m#/W*	m#/W	m#/W#	m#/W	m#/W#	m	m
Calidris pusilla	semipalmated sandpiper						v			
Calidris ruficollis	red-necked stint						v			
Calidris subminuta	long-toed stint						v	m*/W*	m*/W*	
Calidris temminckii	Temminck's stint			m	m/W*	m*/W*	m#/W*	m/W	m/W	m
Calidris tenuirostris	great knot						v	m*/W*	v	
Limicola falcinellus	broad-billed sandpiper			m*	m*	m*/W*	m*	m*/W*	W*	
Philomachus pugnax	ruff and reeve			m#/W*	m#/W*	m#/W	m#W*	m#/W*	m/W	m
Family Stercorariidae (skuas & jaegers)										
Catharacta maccormicki	south polar skua						v	v	v	
Catharacta skua	great skua				v	v	v		v	
Stercorarius longicaudus	long-tailed jaeger				v	m*	m*	m*	v	
Stercorarius parasiticus	parasitic jaeger			m*	m*/W*	m*/W*	m/W*	m/W*	m/W	
Stercorarius pomarinus	Pomarine jaeger				m*	m*/W*	m*/W*	m*/W*	m/W	
Family Laridae										
Subfamily Larinae (gulls)										
Larus armenicus	Armenian gull				mb/W		m/W#	W	mb/W	
Larus audouinii	Audouin's gull	LR		rb*/mb*	mb*	m*	v			
Larus brunnicephalus	brown-headed gull						v	v	v	
Larus cachinnans	yellow-legged gull			rb/W	rb/m	rb/W	m/W	m/W	rb/W	b?/m
Larus canus	mew gull			W*	m/W	W*	m*/W	W*	W	
Larus cirrocephalus	grey-headed gull						v	v		
Larus fuscus	lesser black-backed gull			m#/W*	m#/W	m#/W	m#/W#	W*		
Larus genei	slender-billed gull			m#/W*	mb/m#	mb*/m#	m#/W*	rb#/W	mb#/W	b?/m
Larus hemprichii	sooty gull					rb*/W*	v	rb	W*	
Larus hyperboreus	glaucous gull				v		v	v		
Larus ichthyaetus	great black-headed gull			v	m*/W*	m*/W*	m*/W#	m*/W*	m/W	m
Larus leucophthalmus	white-eyed gull	LR			v	rb/S*	d	rb#	v	
Larus marinus	great black-backed gull			v	v		v		v	
Larus melanocephalus	Mediterranean gull			m*/W*	mb/m#	W*	m*/W*	v	v	
Larus minutus	little gull			m/W	m#/W*	W*	m*/W	v	v	
Larus ridibundus	common black-headed gull			m/W#	rb/m#	m#/W#	m#/W#	m#/W#	rb*/W	m/W
Rissa tridactyla	black-legged kittiwake			v	v	W*	m*/W*	v	v	
Xema sabini	Sabine's gull					v	v	v		
Subfamily Sterninae (terns)										
Anous stolidus	brown noddy							mb*		
Anous tenuirostris	lesser noddy							v		
Chlidonias hybridus	whiskered tern			m*	mb*/m	m#/W#	m#/W*	m*/W*	mb/W	?
Chlidonias leucopterus	white-winged tern			m#	mb/m#	m#/S*	m#	m*/W*	mb	
Chlidonias niger	black tern			m	mb*/m#	m*/W*	frb/m*		m*	
Sterna albifrons	little tern			m*	mb/m*	mb/m	mb*/m#	m*/W*	mb/m	mb/m?
Sterna anaethetus	bridled tern					mb/m	m/S*	mb#/W*	mb	
Sterna bengalensis	lesser crested tern				v	mb/m*	v	rb#/m	rb	
Sterna bergii	great crested tern					W*	v	rb	rb	
Sterna caspia	Caspian tern			m*	mb/W*	rb/m*	m*/d*	rb/W	mb/W	b?
Sterna dougallii	roseate tern					v	v	mb		
Sterna fuscata	sooty tern					v	v	mb*		
Sterna hirundo	common tern			m/W*	mb/m	m/S*	mb/m#	m*/W*	mb/m	mb
Sterna nilotica	gull-billed tern			m	mb/m	m*/W*	mb*/m#	m*/W	mb/W	mb/m
Sterna paradisaea	arctic tern			v	v		v	v		
Sterna repressa	white-cheeked tern					mb/m	m*	mb#/W*	mb	
Sterna sandvicensis	sandwich tern			m*/W*	m/W	m/W	m*/W*	m/W	m/W	
Sterna saundersi	Saunders's little tern					v	v	rb#/W	mb*/W*	

Table 1.2. Cont.

				Range in Near East[a]						
Classification	**Common Name**	**IUCN**	**CITES**	**CYP**	**TUR**	**EGY**	**LEV**	**ARAB**	**IQ/IN**	**AFG**
Family Rynchopidae (skimmers)										
Rynchops albicollis	Indian skimmer	VU						v	v	
Rynchops flavirostris	African skimmer	LR				S*	v	v		
ORDER PTEROCLIDIFORMES										
Family Pteroclididae (sandgrouse)										
Pterocles alchata	pin-tailed sandgrouse			fb	rb	v	rb#/W	rb*/W*	rb/W*	rb
Pterocles coronatus	crowned sandgrouse					rb	rb#	rb*	rb	rb
Pterocles exustus	chestnut-bellied sandgrouse					rb*	v	rb#	rb	
Pterocles lichtensteinii	Lichtenstein's sandgrouse					rb	rb*	rb	rb*	
Pterocles orientalis	black-bellied sandgrouse			rb*/m*	rb/m	W*	rb/W*	W*	rb/W*	b?/m
Pterocles senegallus	spotted sandgrouse				v	rb	rb#	rb*	rb	rb
Syrrhaptes paradoxus	Pallas's sandgrouse				v				W*	
ORDER COLUMBIFORMES										
Family Columbidae (pigeons & doves)										
Columba arquatrix	olive pigeon							mb*		
Columba eversmanni	pale-backed pigeon	VU							rb/W	rb
Columba leuconota	snow pigeon									rb
Columba livia	rock pigeon		III	rb#	rb	rb#	rb#	rb#	rb	rb
Columba oenas	stock pigeon			W*	rb*/m	W*	m*/W#	v	rb/W	W*
Columba palumbus	common wood-pigeon			rb#/W*	rb/W		m*/W	v	rb/W	rb
Columba rupestris	hill pigeon									rb
Oena capensis	Namaqua dove		III			rb*	mb*/W*	rb#		
Streptopelia chinensis	spotted dove									?
Streptopelia decaocto	Eurasian collared-dove			rb	rb	rb	rb#	rb#/W	mb/W	mb
Streptopelia lugens	dusky turtle-dove							rb		
Streptopelia orientalis	oriental turtle-dove					v	v	v	m*	mb/m
Streptopelia roseogrisea	African collared-dove		III			rb	v	rb		
Streptopelia semitorquata	red-eyed dove		III					rb		
Streptopelia senegalensis	laughing dove		III	v	rb	rb#	rb#	rb#	rb	rb
Streptopelia tranquebarica	red-collared dove							v	v	?
Streptopelia turtur	European turtle-dove		III	mb/m#	mb/m	mb/m#	mb/m#	mb*/m#	mb/m	mb/m
Treron waalia	Bruce's green-pigeon		III					mb		
ORDER PSITTACIFORMES										
Family Cacatuidae (cockatoos)										
Cacatua galerita	sulfur-crested cockatoo		II					rbi*		
Family Psittacidae (parrots & parakeets)										
Melopsittacus undulatus	budgerigar							rbi*		
Psittacula eupatria	Alexandrine parakeet		II					rbi*	rbi*	?
Psittacula himalayana	slaty-headed parakeet		II							mb
Psittacula krameri	rose-ringed parakeet		III		rbi	rbi#	rbi#	rbi	rbi	
ORDER CUCULIFORMES										
Family Cuculidae (cuckoos)										
Cacomantis merulinus	plaintive cuckoo							v		
Centropus senegalensis	Senegal coucal					rb				
Centropus superciliosus	white-browed coucal							rb*		
Chrysococcyx caprius	didric cuckoo			v			v	mb*		
Chrysococcyx klaas	Klaas's cuckoo							rb*		
Clamator glandarius	great spotted cuckoo			mb*/m	mb/m	mb/m*	mb/m#	m*/W*	mb/m	
Cuculus canorus	common cuckoo			m#	mb/m	m*	mb*/m*	m*	mb/m	mb/m
Cuculus saturatus	oriental cuckoo						v			
Cuculus varius	Indian hawk cuckoo							v		
Eudynamys scolopacea	Asian koel							W*	W*	
Oxylophus jacobinus	pied cuckoo							mb*/m	fmb	
ORDER STRIGIFORMES										
Family Tytonidae (barn owls)										
Tyto alba	barn owl		II	rb	rb*	rb	rb#	rb*	rb*	

Table 1.2. Cont.

Classification	Common Name	IUCN	CITES	Range in Near East[a] CYP	TUR	EGY	LEV	ARAB	IQ/IN	AFG
Family Strigidae										
Subfamily Buboninae (eagle owls & allies)										
Athene brama	spotted owlet		II						rb	
Athene noctua	little owl		II	rb#	rb#	rb	rb#	rb*	rb#	rb
Bubo africanus	spotted eagle-owl		II					rb		
Bubo ascalaphus	pharaoh eagle-owl		II			rb	rb	rb	rb	
Bubo bubo	Eurasian eagle-owl		II		rb	rb	rb*	rb*	rb	rb
Glaucidium brodiei	collared owlet		II							?
Ketupa zeylonensis	brown fish-owl		II		rb*		frb/v		frb	
Nyctea scandiaca	snowy owl		II						W*	
Otus bakkamoena	collared scops-owl		II						rb?	
Otus brucei	pallid scops-owl		II		mb*	v	rb*/W*	mb*/W*	rb	b?
Otus scops	common scops-owl		II	rb#/m	mb#/m	m*/W*	mb/m	m*/W*	mb/m	b?
Otus senegalensis	African scops-owl		II					rb		
Subfamily Striginae (wood owls & allies)										
Aegolius funereus	boreal owl		II		rb*					
Asio flammeus	short-eared owl		II	m*/W*	rb*/W*	m*/W*	m*/W*	W*	m*/W*	m*/W*
Asio otus	long-eared owl		II	rb*/W*	rb/m	W*	rb*/W*	W*	rb/W*	m/W*
Strix aluco	tawny owl		II		rb		rb*		rb	rb
Strix butleri	Hume's owl		II			rb*	rb	rb*	rb*	
ORDER CAPRIMULGIFORMES										
Family Caprimulgidae (nightjars)										
Caprimulgus aegyptius	Egyptian nightjar					rb*	mb*/m*	m*/W*	mb/m	mb
Caprimulgus asiaticus	Indian nightjar								v	v
Caprimulgus europaeus	European nightjar			mb#/m#	mb	m*	m#/W*	m*	mb	mb/m
Caprimulgus inornatus	plain nightjar							mb*		
Caprimulgus mahrattensis	Syke's nightjar								rb	rb
Caprimulgus nubicus	Nubian nightjar					v	rb*/m*	rb		
Caprimulgus poliocephalus	mountain nightjar							rb		
ORDER APODIFORMES										
Family Apodidae (swifts)										
Apus affinis	little swift			v	mb/m	m*	rb/mb	rb/m	mb/m	mb/m
Apus apus	common swift			mb#/m#	mb/m#	m	mb#/m#	m#/W*	mb	mb/m
Apus berliozi	Berlioz's swift							mb		
Apus caffer	white-rumped swift							v		
Apus pallidus	pallid swift			mb/m*	mb/m	rb/m	mb#/m#	rb/m#	rb/m	
Cypsiurus parvus	African palm-swift					v		rb		
Tachymarptis melba	alpine swift			mb#/m#	mb/m	m*/W*	mb/m#	rb	mb/m	mb/m
ORDER CORACIIFORMES										
Family Alcedinidae (kingfishers)										
Alcedo atthis	common kingfisher			m/W*	rb/m	m/W	m/W	W*	rb/m	rb/mb
Alcedo cristata	malachite kingfisher							rb*		
Ceryle rudis	pied kingfisher			W*	rb/m	rb	rb#/W	W*	rb/m	b?
Halcyon chloris	white-collared kingfisher							rb*		
Halcyon leucocephala	grey-headed kingfisher							mb*		
Halcyon smyrnensis	white-throated kingfisher			W*	rb	W*	rb#	m*	rb	rb?
Family Meropidae (bee-eaters)										
Merops albicollis	white-throated bee-eater							mb#		
Merops apiaster	European bee-eater			mb*/m#	mb/m	mb*/m	mb#/m#	mb/m#	mb/m	mb/m
Merops orientalis	little green bee-eater					rb	rb	rb#	rb	b?
Merops superciliosus	Madagascar bee-eater			m*	mb/m	mb/m	mb*/m*	mb/m#	mb/m	mb/m
Family Coracíidae (rollers)										
Coracias abyssinica	Abyssinian roller					v		rb*		
Coracias benghalensis	Indian roller				v			rb*/W*	rb*/m	
Coracias caudata	lilac-breasted roller							v		
Coracias garrulus	European roller			mb*/m#	mb/m	m*	mb#/m#	m	mb/m	mb/m
Coracias naevia	rufous-crowned roller							v		
Family Upupidae (hoopoes)										
Upupa epops	Eurasian hoopoe			mb/m#	mb/m	rb#/m	rb#/m#	rb#/m#	mb/m	mb/m
ORDER BUCEROTIFORMES										
Family Bucerotidae (hornbills)										
Tockus nasutus	African grey hornbill							rb		

Table 1.2. Cont.

Classification	Common Name	IUCN	CITES	Range in Near East[a] CYP	TUR	EGY	LEV	ARAB	IQ/IN	AFG
ORDER PICIFORMES										
Family Picidae (wrynecks & woodpeckers)										
Subfamily Jynginae (wrynecks)										
Jynx torquilla	Eurasian wryneck			m#/W*	mb/m	m*/W*	m/W*	m*/W*	mb/m	m
Subfamily Picinae (woodpeckers)										
Dendrocopos assimilis	Sind pied woodpecker								rb	
Dendrocopos auriceps	brown-fronted woodpecker									rb
Dendrocopos dorae	Arabian woodpecker	VU						rb#		
Dendrocopos himalayensis	Himalayan woodpecker									rb
Dendrocopos leucopterus	white-winged woodpecker	LR							rb*	rb
Dendrocopos leucotos	white-backed woodpecker				rb					
Dendrocopos major	greater spotted woodpecker				rb				rb	
Dendrocopos medius	middle spotted woodpecker				rb				rb	
Dendrocopos minor	lesser spotted woodpecker				rb				rb	
Dendrocopos syriacus	Syrian woodpecker				rb	rb*	rb#		rb	
Dryocopus martius	black woodpecker				rb				rb	
Picus canus	grey-faced woodpecker				rb					
Picus squamatus	scaly-bellied woodpecker								rb	rb
Picus viridis	Eurasian green woodpecker				rb				rb	?
ORDER PASSERIFORMES										
Family Alaudidae (larks)										
Alaemon alaudipes	greater hoopoe-lark					rb#	rb	rb#	rb	rb
Alauda arvensis	Eurasian skylark			m/W#	rb/m#	W	m#/W#	W*	rb/W	m/W
Alauda gulgula	oriental skylark					v	m*/W*	v	rb	rb
Ammomanes cincturus	bar-tailed lark					rb	rb	rb#	rb	
Ammomanes deserti	desert lark			v	rb*	rb#	rb#	rb#	rb	rb
Calandrella acutirostris	Hume's lark						v		v	b?
Calandrella brachydactyla	greater short-toed lark			mb#/m#	mb	m#/W*	mb/m#	m#/W#	mb	
Calandrella cinerea	red-capped lark							rb		
Calandrella raytal	Indian sand lark								rb*	
Calandrella rufescens	lesser short-toed lark			m*/W*	rb/m	rb/W	rb#/m*	W#	rb	rb/m
Chersophilus duponti	Dupont's lark			v		rb*				
Eremalauda dunni	Dunn's lark					v	rb*	rb#		
Eremophila alpestris	horned lark			v	rb		rb*/mb*		rb	rb
Eremophila bilopha	Temminck's lark					rb	rb/m*	rb/W	rb	
Eremopterix nigriceps	black-crowned sparrow-lark					rb#	v	rb	mb*	
Eremopterix signata	chestnut-headed sparrow-lark						v			
Galerida cristata	crested lark			rb#	rb#	rb#	rb#	rb#	rb#	rb
Galerida theklae	Thekla lark					rb*				
Lullula arborea	wood lark			rb#/W#	rb/W	W*	m/W#	v	rb/W	
Melanocorypha bimaculata	bimaculated lark			m*	mb	m*/W*	m*/W*	m/W	mb	b?/m
Melanocorypha calandra	calandra lark			rb#/m*	rb#/m	m*/W*	rb/m*	v	rb/W	rb
Melanocorypha leucoptera	white-winged lark				W*				W	
Melanocorypha yeltoniensis	black lark				v				W*	
Mirafra cantillans	singing lark							rb*		
Ramphocorys clotbey	thick-billed lark					m*/W*	rb*	rb*/W*		
Family Hirundinidae (swallows & martins)										
Delichon urbica	northern house-martin			mb#/m#	mb/m#	m#/S*	mb#/m#	m*/W	mb/m	mb/m
Hirundo abyssinica	lesser striped swallow							v		
Hirundo aethiopica	Ethiopian swallow						v			
Hirundo daurica	red-rumped swallow			mb#/m	mb/m	m/W*	mb#/m#	mb*/m*	mb/m	mb
Hirundo fluvicola	streak-throated swallow									mb
Hirundo obsoleta	pale crag-martin					rb#	rb#/m	rb#/m	rb/mb	b?
Hirundo rupestris	Eurasian crag-martin			rb/m*	mb/W*	m*/W*	m/W*	rb*/m*	mb/m*	mb
Hirundo rustica	barn swallow			mb#/m#	mb#/m#	rb#/m	rb/m#	m#/W*	mb/m	mb/m
Hirundo smithii	wire-tailed swallow							v		mb
Riparia cincta	banded martin							v		
Riparia paludicola	plain martin					v	v	v		mb
Riparia riparia	sand martin			m#	mb/m	rb/m	mb/m#	m#/W*	mb/m	mb/m
Family Motacillidae (pipits & wagtails)										
Anthus campestris	tawny pipit			m	mb/m	m/W*	mb*/m	m#/W#	mb/m	mb*/m
Anthus cervinus	red-throated pipit			m#/W*	m#/W	m#/W#	m#/W	m#/W*	W	m
Anthus godlewskii	Blyth's pipit						v	v		
Anthus gustavi	pechora pipit							v?		
Anthus hodgsoni	olive-backed pipit			v	v		m*/W*	v		
Anthus petrosus	rock pipit			v						
Anthus pratensis	meadow pipit			m#/W	m#/W#	m*/W	m*/W#	m*/W*	W	
Anthus richardi	Richard's pipit			m*	m*/W*	m*/W*	m*/W*	m*/W*	m*/W*	mb

Table 1.2. Cont.

				Range in Near East[a]						
Classification	**Common Name**	**IUCN**	**CITES**	**CYP**	**TUR**	**EGY**	**LEV**	**ARAB**	**IQ/IN**	**AFG**
Anthus roseatus	rosy pipit									?
Anthus rubescens	buff-bellied pipit						m*/W*	v		
Anthus similis	long-billed pipit			v			rb	rb/W*	mb/W*	mb
Anthus spinoletta	water pipit			m/W*	rb/W	m/W#	m/W#	m/W#	rb/W	m/W
Anthus sylvanus	upland pipit									rb?
Anthus trivialis	tree pipit			m#	mb/m#	m#	m#/W*	m#/W*	mb/m	m/W
Dendronanthus indicus	forest wagtail							v		
Motacilla aguimp	African pied wagtail					rb*	v			
Motacilla alba	white wagtail			m#/W#	rb#/m#	m#/W#	m#/W#	W#	rb/W	rb/m
Motacilla cinerea	grey wagtail			m*/W	rb/m	m/W	m#/W#	m#	rb/m	mb/m
Motacilla citreola	citrine wagtail			m*	mb/m*	v	m*/W*	m*/W*	mb/W	mb/m
Motacilla flava	yellow wagtail			mb*/m#	mb/m#	rb#/m	mb/m#	m#/W*	mb/m	mb/m
Tmetothylacus tenellus	golden pipit							v		
Family Campephagidae (cuckoo shrikes)										
Pericrocotus ethologus	long-billed minivet									mb
Family Pycnonotidae (bulbuls)										
Pycnonotus barbatus	garden bulbul					rb#				
Pycnonotus cafer	red-vented bulbul							rb*		
Pycnonotus leucogenys	white-cheeked bulbul						v	rb#	rb	rb
Pycnonotus leucotis	white-eared bulbul								rb	rb
Pycnonotus xanthopygos	yellow-vented bulbul				rb	rb#	rb#	rb#		
Family Bombycillidae (waxwings & hypocolius)										
Bombycilla garrulus	Bohemian waxwing			v	W*		v		W*	
Hypocolius ampelinus	grey hypocolius					v	v	W*	mb/W	b?
Family Cinclidae (dippers)										
Cinclus cinclus	white-throated dipper			m*	rb		rb*		rb	rb
Cinclus pallasii	brown dipper									rb
Family Troglodytidae (wrens)										
Troglodytes troglodytes	winter wren			rb#/W*	rb/m	v	rb/W*	v	rb#/W	rb
Family Prunellidae (accentors)										
Prunella atrogularis	black-throated accentor						v	v	W*	W
Prunella collaris	alpine accentor				rb		W*		rb	rb
Prunella fagani	Yemen accentor	LR						rb		
Prunella fulvescens	brown accentor									rb?
Prunella himalayana	rufous-streaked accentor									rb
Prunella modularis	hedge accentor/dunnock			W*	rb/m	W*	m/W		rb/W	
Prunella montanella	Siberian accentor						v			
Prunella ocularis	Radde's accentor				mb/W		W*	v	mb/W	
Prunella strophiata	rufous-breasted accentor									rb
Family Turdidae (chats & thrushes)										
Cercomela familiaris	familiar chat							v		
Cercomela melanura	blackstart					rb	rb#	rb#		
Cercotrichas galactotes	rufous-tailed scrub-robin			m*	mb/m	mb/m	mb#/m#	mb*/m*	mb/m	mb/m
Cercotrichas podobe	black scrub-robin						v	rb*		
Chaimarrornis leucocephalus	white-capped water-redstart									rb
Enicurus maculatus	spotted forktail									rb
Enicurus scouleri	little forktail									rb
Erithacus calliope	Siberian rubythroat						v			
Erithacus rubecula	European robin			m/W#	rb/m#	W	m/W#	W*	rb/W	
Irania gutturalis	white-throated robin			v	mb	v	mb*/m*	m*	mb#	mb/m
Luscinia brunnea	Indian blue robin									mb
Luscinia luscinia	thrush-nightingale/sprosser			m	m*	m	m#	m*	m*	
Luscinia megarhynchos	common nightingale			mb#/m#	mb/m	m	mb/m#	m*	mb/m	mb
Luscinia pectoralis	white-tailed rubythroat									mb
Luscinia svecica	bluethroat			m/W*	mb/m	m#/W#	m#/W#	m*/W*	m/W	mb/m
Monticola cinclorhynchus	blue-capped rock-thrush									mb
Monticola rufocinerea	little rock-thrush							rb		
Monticola saxatilis	rufous-tailed rock-thrush			m	mb#	m/W*	mb*/m	m*/W*	mb/m*	mb/m
Monticola solitarius	blue rock-thrush			rb/m	mb/W	m/W	rb#/m*	m*/W*	mb/W	mb/W
Myophonus caeruleus	blue whistling-thrush									rb
Oenanthe alboniger	Hume's wheatear							rb	rb	rb?
Oenanthe bottae	Botta's wheatear							rb#		
Oenanthe cypriaca	Cyprus wheatear			mb#	m*	m*/W*	m*	v		
Oenanthe deserti	desert wheatear			m*	v	rb/m	rb/m	m#/W#	mb/W	mb/m
Oenanthe finschii	Finsch's wheatear			m*/W	mb/W	W*	m*/W	W*	mb/W	mb/m
Oenanthe hispanica	black-eared wheatear			m	mb#/m	m/W*	mb#/m#	m*/W*	mb/m	

Table 1.2. Cont.

Classification	Common Name	IUCN	CITES	Range in Near East[4] CYP	TUR	EGY	LEV	ARAB	IQ/IN	AFG
Oenanthe isabellina	isabelline wheatear			m#	mb/m	m#/W	m#/W	m#/W#	mb/W	mb/m
Oenanthe leucopyga	white-tailed wheatear			v	v	rb#	rb#	rb	v	
Oenanthe leucura	black wheatear					v	v			
Oenanthe lugens	mourning wheatear			v	v	rb#	rb#	rb/W*	mb/m*	
Oenanthe lugentoides	South Arabian wheatear							rb		
Oenanthe moesta	red-rumped wheatear				v	rb	rb	rb*		
Oenanthe monacha	hooded wheatear			v		rb	rb	rb*	rb	
Oenanthe oenanthe	northern wheatear			m#	mb#/m#	m#/W*	mb/m#	m*	mb/m	mb/m
Oenanthe picata	variable wheatear					v	v	W*	mb/W	mb/m
Oenanthe pleschanka	pied wheatear			v	mb	m*/W*	m*	m/W*	mb/m	mb/m
Oenanthe xanthoprymna	rufous-tailed wheatear			v	mb/m	W*	v	W*	mb/W	mb/m
Phoenicurus caeruleocephalus	blue-capped redstart									mb
Phoenicurus erythrogaster	Güldenstädt's redstart									m
Phoenicurus erythronotus	Eversmann's redstart				v		v	W*	W*	m/W
Phoenicurus frontalis	blue-fronted redstart									mb?
Phoenicurus ochruros	black redstart			m*/W#	mb/W	m/W	m/W	m*/W	mb/W	mb/m
Phoenicurus phoenicurus	common redstart			m#	mb/m	m#/W*	m#/W*	m#/W*	mb/m	
Rhyacornis fuliginosus	plumbeous water-redstart									rb
Saxicola caprata	pied bushchat			v			v	v	mb	mb/m
Saxicola macrorhyncha	white-browed bushchat	VU								?
Saxicola rubetra	whinchat			m#	mb/m	m	m#	m*W*	mb/m	
Saxicola torquata	common stonechat			m*/W#	rb/m	m/W	m#/W#	m#/W*	rb/W	mb/m
Saxicoloides fulicata	Indian robin									?
Tarsiger cyanurus	orange-flanked bush-robin			v			v			
Turdus iliacus	redwing			m*/W*	m/W	W*	m*/W*	W*	m/W	
Turdus menachensis	Yemen thrush	VU						rb#		
Turdus merula	Eurasian blackbird			m/W#	rb#	rb#/W	rb#/W	v	rb#	rb?/W
Turdus naumanni	dusky thrush			v			v	v		
Turdus obscurus	eyebrowed thrush			v				v		
Turdus philomelos	song thrush			m*/W#	rb/m	W	m#/W#	m*/W*	rb/W	
Turdus pilaris	fieldfare			W	W	W*	m*/W	W*	W	
Turdus ruficollis	dark-throated thrush					v	v	m*/W*	W	m/W
Turdus torquatus	ring ouzel			m*/W*	mb/W	W*	m*/W*	v	mb/W	
Turdus viscivorus	mistle thrush			m*/W*	rb/m	W*	m*/W*	v	rb/W	mb?
Zoothera dauma	White's thrush							v		
Zoothera sibirica	Siberian thrush						v			
Family Sylviidae (Old World warblers)										
Acrocephalus aedon	thick-billed warbler					v				
Acrocephalus agricola	paddyfield warbler				mb*/m		v	v	mb/W*	mb/m
Acrocephalus arundinaceus	great reed-warbler			mb*/m	mb#/m	m	mb*/m#	m*	mb/m	m
Acrocephalus baeticatus	African reed-warbler						v	rb*		
Acrocephalus concinens	blunt-winged warbler									mb
Acrocephalus dumetorum	Blyth's reed-warbler			v	v		v	m*	mb*/m*	mb/m
Acrocephalus griseldis	Basra reed-warbler	LR					v	m	mb/m	
Acrocephalus melanopogon	moustached warbler			W	rb/W#	m*	m/W#	rb/W	rb/mb	mb/m?
Acrocephalus orientalis	Eastern great reed-warbler						v			
Acrocephalus paludicola	aquatic warbler	VU		v	v		v			
Acrocephalus palustris	marsh warbler			m*	mb/m*	m*	m*	m*	mb*/m	
Acrocephalus schoenobaenus	sedge warbler			m	mb#/m	m#/W*	m#/W*	m*/W*	mb/m	
Acrocephalus scirpaceus	Eurasian reed-warbler			mb#/m	mb#/W	mb*/m#	mb/m#	m	mb/m	mb
Acrocephalus stentoreus	clamorous reed-warbler					rb#	rb#	m*/W*	mb/W*	mb/m
Cettia cetti	Cetti's warbler			rb#	rb/W	v	rb#/m	v	rb/W*	mb/m
Cisticola haesitata	Socotra cisticola	VU						rb		
Cisticola juncidis	zitting cisticola			rb#	rb	rb#	rb#/m	rb	rb	
Hippolais caligata	booted warbler				v	v	m*	mb*/m*	mb/m	mb/m
Hippolais icterina	icterine warbler			m*	mb*/m*	m*/W*	m*	m*	mb*/m*	
Hippolais languida	Upcher's warbler				mb*/m*		mb/m	m*/W*	mb/m	mb
Hippolais olivetorum	olive-tree warbler			m*	mb*/m*	m*	mb/m*	m*		
Hippolais pallida	olivaceous warbler			mb#/m	mb#/m	mb#/m#	mb#/m#	mb/m#	mb/m	mb
Hippolais polyglotta	melodious warbler				v					
Incana incana	Socotra warbler							rb		
Locustella certhiola	Pallas's grasshopper-warbler						v			m
Locustella fluviatilis	Eurasian river warbler			m*	m*	m*	m*	m*	m*	
Locustella luscinioides	Savi's warbler			m	mb*/m*	m*/W*	mb*/m#	mb*/m*	m*	
Locustella naevia	common grasshopper-warbler			v	mb*/m*	v	v	m*	mb?/m*	m
Phylloscopus bonelli	Bonelli's warbler			m	mb*/m*	m/S*	mb*/m#	m*	mb*	
Phylloscopus borealis	arctic warbler							v		
Phylloscopus collybita	common chiffchaff			m#/W#	mb/m#	m#/W#	m#/W#	m#/W#	mb/W	m
Phylloscopus fuscatus	dusky warbler			v		v	v	v		
Phylloscopus griseolus	sulfur-bellied warbler									mb
Phylloscopus humei	Hume's yellow-browed warbler				v		v	v	m*	m*
Phylloscopus inornatus	yellow-browed warbler			v	W*	m*	m*	v	W*	mb/m

Table 1.2. Cont.

Classification	Common Name	IUCN	CITES	Range in Near East[a] CYP	TUR	EGY	LEV	ARAB	IQ/IN	AFG
Phylloscopus neglectus	plain leaf-warbler						v	W*	rb/W	b?
Phylloscopus nitidus	green willow warbler				mb/m*		v	m*	mb/m	mb/m
Phylloscopus occipitalis	western crowned-warbler									mb
Phylloscopus proregulus	Pallas's warbler						v	v		
Phylloscopus schwarzi	Radde's warbler						v	v		v
Phylloscopus sibilatrix	wood warbler			m	m#	m	m	m*	m	
Phylloscopus sindianus	mountain chiffchaff				mb/m		v		mb/W	W
Phylloscopus subviridis	Brooks's leaf-warbler									mb
Phylloscopus trochiloides	greenish warbler				mb/m		v	m*	m*	mb/m
Phylloscopus trochilus	willow warbler			m*	m#	m/W*	m#	m#	m	
Phylloscopus tytleri	Tytler's leaf-warbler	LR								mb
Phylloscopus umbrovirens	brown woodland-warbler							rb#		
Prinia criniger	hill prinia									b?
Prinia gracilis	graceful prinia			v	rb#	rb#	rb#	rb#	rb	rb
Scotocerca inquieta	streaked scrub-warbler					rb	rb#	rb#	rb	rb
Sylvia atricapilla	blackcap			m#/W	mb/m#	m/W*	m#/W*	m*	mb/m	
Sylvia borin	garden warbler			m*	mb*/m*	m/W*	m	m*	m#	
Sylvia buryi	Yemen warbler	VU						rb#		
Sylvia cantillans	subalpine warbler			m	mb/m*	m/W	m*	m*		
Sylvia communis	common whitethroat			m	mb#/m#	m#	mb#/m#	m#	mb/m	m
Sylvia conspicillata	spectacled warbler			rb#	v	rb*/W*	rb/W*	v	v	
Sylvia curruca	lesser whitethroat			m#	mb/m#	m#/W	mb*/m#	m#/W#	mb/m	m
Sylvia curruca althaea	Hume's lesser whitethroat								mb/W*	mb
Sylvia curruca minula	desert lesser whitethroat						v	m/W	mb/W	
Sylvia hortensis	orphean warbler			m	mb/m	m*/W*	mb/m	m/W*	mb/W*	mb/m
Sylvia leucomelaena	Red Sea warbler					rb#	rb#	rb#		
Sylvia melanocephala	Sardinian warbler			m*/W	rb/m	m#/W#	rb#/m	v		
Sylvia melanothorax	Cyprus warbler			rb#/mb	v	v	m/W*	v		
Sylvia minula	small whitethroat									m
Sylvia mystacea	Ménétries's warbler				mb	m*/W*	m*	m*/W*	mb/W*	mb/m
Sylvia nana	desert warbler			v	v	m*/W*	m*/W*	W#	mb/W	m
Sylvia nisoria	barred warbler			m*	mb/m	m*/W*	m	m/W*	mb*	?
Sylvia rueppelli	Rüppell's warbler			m	mb	m/W*	mb*/m	m*	v	
Sylvia sarda	Marmora's warbler					v				
Family Regulidae (goldcrests & firecrests)										
Regulus ignicapillus	firecrest			v	rb*/W	v				
Regulus regulus	goldcrest			W*	rb#/W	W*	W*		rb/W*	b?/W
Family Muscicapidae (Old World flycatchers)										
Cyanoptila cyanomelana	blue-and-white flycatcher							v		
Ficedula albicollis	collared flycatcher			m	m*	m*	m	m*	m	
Ficedula hypoleuca	European pied flycatcher			m	m	m*	m		m*	
Ficedula parva	red-breasted flycatcher			m*	mb/m#	m*/W*	m*	m*/W*	mb/m#	m
Ficedula semitorquata	semi-collared flycatcher			m*	mb/m	m*	m	m*	mb/m	
Ficedula superciliaris	ultramarine flycatcher									b?
Muscicapa gambagae	gambaga flycatcher							mb#		
Muscicapa ruficauda	rusty-tailed flycatcher									mb
Muscicapa sibirica	dark-sided flycatcher									mb
Muscicapa striata	spotted flycatcher			mb/m#	mb#/m#	m#/W*	mb/m#	m#/W*	mb/m	mb/m
Family Monarchidae (monarchs & fantails)										
Terpsiphone paradisi	Asian paradise-flycatcher									mb
Terpsiphone viridis	African paradise-flycatcher							rb		
Family Timalidae (babblers)										
Garrulax lineatus	streaked laughingthrush									mb
Garrulax variegatus	variegated laughingthrush									mb
Turdoides altirostris	Iraq babbler	LR							rb	
Turdoides caudatus	common babbler								rb	rb
Turdoides fulvus	fulvous babbler					rb*				
Turdoides squamiceps	Arabian babbler					rb	rb	rb		
Family Panuridae (parrotbills)										
Panurus biarmicus	bearded parrotbill			W	rb	v	W*	v	rb/W*	
Family Paridae (tits)										
Parus ater	coal tit			rb#	rb#		rb*		rb	
Parus bokharensis	Turkestan tit								rb*	
Parus caeruleus	blue tit				rb#		rb#		rb	
Parus cyanus	azure tit								v	rb
Parus lugubris	somber tit				rb#		rb#		rb	
Parus major	great tit			rb#	rb#	rb#	rb#		rb	rb

Table 1.2. Cont.

Classification	Common Name	IUCN	CITES	Range in Near East[4] CYP	TUR	EGY	LEV	ARAB	IQ/IN	AFG
Parus melanolophus	black-crested tit									rb
Parus palustris	marsh tit				rb*					
Parus rubidiventris	rufous-vented tit									rb
Family Aegithalidae (long-tailed tits)										
Aegithalos caudatus	long-tailed tit				rb#				rb	
Aegithalos leucogenys	white-cheeked tit									rb
Family Sittidae										
Subfamily Sittinae (nuthatches)										
Sitta europaea	wood nuthatch				rb		rb*		rb	rb
Sitta krueperi	Krüper's nuthatch				rb					
Sitta leucopsis	white-cheeked nuthatch									rb
Sitta neumayer	western rock-nuthatch				rb#		rb*		rb	
Sitta tephronota	eastern rock-nuthatch				rb				rb	rb
Subfamily Tichodromadinae (wall creepers)										
Tichodroma muraria	wall creeper			W	rb/W		rb/W*		rb/W	rb
Family Certhiidae (tree creepers)										
Certhia brachydactyla	short-toed tree creeper			rb#	rb					
Certhia familiaris	Eurasian tree creeper				rb				rb	
Certhia himalayana	bar-tailed tree creeper									rb
Family Remizidae (penduline-tits)										
Remiz pendulinus	Eurasian penduline-tit			W*	rb	W*	m/W	W*	rb#/W	m/W
Family Nectarinidae (sunbirds)										
Anthreptes metallicus	Nile Valley sunbird					rb		rb		
Nectarinia asiatica	purple sunbird							rb	rb	b?
Nectarinia balfouri	Socotra sunbird							rb		
Nectarinia habessinica	shining sunbird					rb		rb#		
Nectarinia osea	Palestine sunbird					rb	rb#	rb#		
Family Oriolidae (orioles)										
Oriolus oriolus	Eurasian golden-oriole			mb*/m	mb/m#	m	mb/m#	mb/m*	mb/m	mb
Family Dicruridae (drongos)										
Dicrurus leucophaeus	ashy drongo									mb
Dicrurus macrocercus	black drongo							v	fmb	mb
Family Laniidae										
Subfamily Malaconotinae (bush-shrikes & allies)										
Rhodophoneus cruentus	rosy-patched bushshrike					rb#				
Tchagra senegala	black-crowned tchagra							rb*		
Subfamily Laniinae (shrikes)										
Lanius collurio	red-backed shrike			m#	mb/m#	m/W*	mb#/m#	m#	mb/m	mb/m
Lanius excubitor	northern shrike			v	m*/W*	rb/W	rb#/W	rb#/m#	rb#/W*	b?/W
Lanius isabellinus	rufous-tailed shrike			v	m*	m*	m*/W*	m#/W*	mb/m#	b?
Lanius minor	lesser grey shrike			m*	mb/m#	m	m#	m*	mb/m	mb
Lanius nubicus	masked shrike			mb#/m#	mb/m*	m	mb#/m	m*/W*	mb/m	
Lanius schach	long-tailed shrike				v		v	v	frb	rb/m
Lanius senator	woodchat shrike			mb*/m	mb/m#		mb/m	mb/m	mb/m	?
Lanius vittatus	bay-backed shrike							v	rb	b?
Family Corvidae (crows & allies)										
Corvus corax	common raven			rb*	rb	rb*	rb*		rb	rb
Corvus corone	carrion crow			rb#	rb#	rb#	rb#		rb/W	b?/W
Corvus frugilegus	rook			W*	rb/m#	W*	W	W*	rb/W	W
Corvus macrorhynchos	large-billed crow								frb	rb?
Corvus monedula	Eurasian jackdaw			rb#/W	rb#		rb*/W#		rb/W	rb/W
Corvus rhipidurus	fan-tailed raven					rb	rb	rb		
Corvus ruficollis	brown-necked raven				v	rb#	rb#	rb#	rb	rb
Corvus splendens	house crow					rbi*	rbi	rbi*	rbi*	
Garrulus glandarius	Eurasian jay			rb#	rb#		rb#		rb	
Garrulus lanceolatus	black-headed jay									rb
Nucifraga caryocatactes	spotted nutcracker				v				v	rb
Pica pica	black-billed magpie			rb#/W	rb#		v	rb*	rb#	rb
Podoces pleskei	Iranian ground-jay								rb	
Pyrrhocorax graculus	yellow-billed chough				rb		rb/W*		rb	rb
Pyrrhocorax pyrrhocorax	red-billed chough				rb		rb*		rb	rb

Table 1.2. Cont.

Classification	Common Name	IUCN	CITES	Range in Near East[4] CYP	TUR	EGY	LEV	ARAB	IQ/IN	AFG
Family Sturnidae (starlings)										
Acridotheres ginginianus	bank mynah							rbi*		v
Acridotheres tristis	common mynah							rbi*	rb*	rb?
Cinnyricinclus leucogaster	violet-backed starling						v	rb#		
Creatophora cinerea	wattled starling							v		
Onychognathus blythii	Somali starling							rb		
Onychognathus frater	Socotra starling	VU						rb		
Onychognathus tristramii	Tristram's starling					rb	rb	rb#		
Sturnus contra	Asian pied starling							v		
Sturnus pagodarum	Brahminy starling							rbi*		mb
Sturnus roseus	rosy starling			m*	mb*/m*	m*	m*	W*	mb/m	mb/m
Sturnus vulgaris	common starling			m*/W#	rb#/m#	W*	m/W#	W*	rb#/W	m/W
Family Zosteropidae (white-eyes)										
Zosterops abyssinica	white-breasted white-eye							rb#		
Zosterops palpebrosus	oriental white-eye									?
Family Ploceidae										
Subfamily Passerinae (sparrows)										
Montifringilla nivalis	white-winged snowfinch				rb#				rb	rb
Montifringilla theresae	Afghan snowfinch									rb
Passer ammodendri	saxaul sparrow								frb	
Passer domesticus	house sparrow			rb#/m*	rb#	rb#	rb#	rb#	rb#	rb/m
Passer euchlorus	Arabian golden-sparrow							rb#		
Passer hispaniolensis	Spanish sparrow			rb#/m#	rb/mb	m#/W#	rb#/m#	W	rb/m	rb/m
Passer insularis	Socotra sparrow							rb		
Passer luteus	Sudan golden-sparrow					m				
Passer moabiticus	Dead Sea sparrow			rb/mb	mb	v	rb#	W*	rb	rb
Passer montanus	Eurasian tree sparrow			W*	rb/W	v	W*	v	rb	rb
Passer pyrrhonotus	Sind jungle sparrow								rb*	
Passer rutilans	russet sparrow									?
Passer simplex	desert sparrow					v				
Petronia brachydactyla	pale rock-sparrow			v	mb*	m*	mb*/m	m/W	mb/W	mb?
Petronia dentata	bush petronia		III					rb*		
Petronia petronia	streaked rock sparrow			v	rb#/W		rb#/W	rb	rb/W	rb
Petronia xanthocollis	chestnut-shouldered petronia				mb*		v	mb/W*	mb/W	mb?
Subfamily Ploceinae (weavers)										
Ploceus galbula	Rüppell's weaver							rb#		
Ploceus intermedius	lesser masked weaver							rbi*		
Ploceus manyar	streaked weaver					rbi		rbi*		
Ploceus philippinus	Baya weaver							rbi*		
Family Estrildidae (waxbills)										
Amandava amandava	red avadavat					rbi	rbi	rbi	rbi	
Amandava subflava	zebra waxbill		III					rb		
Estrilda rufibarba	Arabian waxbill							rb*		
Lonchura cantans	African silverbill		III			rb		rb*		
Lonchura malabarica	Indian silverbill						rbi*	rb	rb*	
Lonchura malacca	black-headed munia							v		
Family Fringillidae (finches)										
Acanthis cannabina	Eurasian linnet			rb/W#	rb*/m#	W	rb#/m#	W*	rb/W	rb
Acanthis flammea	common redpoll			v	v		v			
Acanthis flavirostris	twite				rb/W				rb/W	rb
Acanthis yemenensis	Yemen linnet							rb#		
Carduelis carduelis	European goldfinch			rb#/W#	rb#/m#	rb#/W	rb#/m#	W	rb/W	rb/W
Carduelis chloris	European greenfinch			rb#/W#	rb/m#	rb/W	rb#/m#	W*	rb/W	W?
Carduelis spinus	Eurasian siskin			W	rb/m*	W*	m/W	W*	rb/W	
Carpodacus erythrinus	common rosefinch			v	mb	m*	m*/W*	v	mb/m#	mb/m
Carpodacus rhodochlamys	red-mantled rosefinch									rb
Carpodacus rubicilla	great rosefinch				rb?				rb?	rb
Carpodacus synoicus	pale rosefinch					rb	rb	rb		rb
Coccothraustes/ Mycerobas carniperes	white-winged grosbeak								rb	rb
Coccothraustes coccothraustes	hawfinch			W*	rb*	W*	m/W	v	rb	rb?
Coccothraustes/ Mycerobas icterioides	black-and-yellow grosbeak									rb?
Fringilla coelebs	chaffinch			rb#/m#	rb#	m/W*	m*/W	m/W	rb/W	W
Fringilla montifringilla	brambling			W*	m/W	W*	m*/W	W*	m/W#	W
Leucosticte brandti	Brandt's rosy finch									rb
Leucosticte nemoricola	Hodgson's rosy finch									rb
Loxia curvirostra	red crossbill			rb/W*	rb*		rb*/W*		v	

Table 1.2. Cont.

				Range in Near East[4]						
Classification	**Common Name**	**IUCN**	**CITES**	**CYP**	**TUR**	**EGY**	**LEV**	**ARAB**	**IQ/IN**	**AFG**
Pyrrhula pyrrhula	Eurasian bullfinch				rb*				rb*	
Rhodopechys githaginea	trumpeter finch			m*	rb*	rb#	rb	rb*	rb	rb
Rhodopechys mongolica	Mongolian trumpeter finch				rb*			v	rb	rb/W
Rhodopechys obsoleta	desert finch				rb#	v	rb*	rb	rb	rb
Rhodopechys sanguinea	crimson-winged finch				rb/W#		mb#		rb	rb
Rhynchostruthus socotranus	golden-winged grosbeak							rb		
Serinus menachensis	Yemen serin							rb*		
Serinus pusillus	red-fronted serin			v	rb/m	v	m*/W*		rb/m	rb
Serinus rothschildi	olive-rumped serin							rb*		
Serinus serinus	European serin			rb/W	rb#/m#	W	m#/W#		v	
Serinus syriacus	Syrian serin	LR				m*/W*	mb#/m*			
Family Emberizidae (buntings)										
Emberiza aureola	yellow-breasted bunting			v	v	v	v	v	v	
Emberiza bruniceps	red-headed bunting				v		v	v	mb	mb/m
Emberiza buchanani	grey-necked bunting				mb*		v		mb/m	mb/m
Emberiza caesia	Cretschmar's bunting			mb#/m	mb/m	m	mb#/m#	m*/W*	v	
Emberiza cia	rock bunting			m*/W*	rb		rb/W*	W*	rb/W	mb?/m
Emberiza cineracea	cinereous bunting	LR		m*	mb/m	m*	m*	m*/W*	mb	
Emberiza cirlus	cirl bunting				rb	v			v	
Emberiza citrinella	yellow-hammer			W*	rb*/m*	v	W#		W	
Emberiza fucata	chestnut-eared bunting									?
Emberiza hortulana	ortolan bunting			m	mb/m*	m/W*	mb*/m#	m*/W*	mb/m	?
Emberiza leucocephala	pine bunting			v	v		W*	v	W	m/W
Emberiza melanocephala	black-headed bunting			mb#	mb#/m	m*	mb/m#	m*	mb/m	v
Emberiza pusilla	little bunting				m*	v	m*	m*/W*	m*	
Emberiza rustica	rustic bunting				v	v	v	v	v	
Emberiza schoeniclus	reed bunting			W#	rb*/m#	v	m*/W*	W*	rb/W*	W
Emberiza socotrana	Socotra bunting	VU						rb*		
Emberiza stewarti	white-capped bunting							v	v	mb
Emberiza striolata	house bunting				v	rb	rb#	rb#	rb	
Emberiza tahapisi	cinnamon-breasted bunting					v		rb#		
Miliaria calandra	corn bunting			rb#/m#	rb#/W	m/W	rb/W#	W*	rb/W	rb?
Plectrophenax nivalis	snow bunting				W*		W*			

Legend:

[1] Taxonomic organization in ornithology has weathered numerous debates and modifications, but it is destined to mutate yet further a interspecies relationships are explored using the evidence of DNA. To permit non-specialist readers to find particular birds with minimu difficulty, Table 1.2 has been assembled following the traditional sequence of orders and their constituent families found in most of the bird lis compiled for the countries of the Near East. The only difference is that here species appear alphabetically by genus within larger taxa.

Avian migrations are highly sensitive to environmental changes. Extensive land modifications and hunting impacts of the nineteenth twentieth centuries make it unlikely that current patterns of flight, residence, and breeding will, in all cases, closely reflect those of earlier time In antiquity, the world of birds might have been different in as yet unknown ways. Further, the modern behavior of some species is still uncertai and nearly all the data currently available for Afghanistan is in need of clarification and verification. The table is based on observation recor dating from the 1950s to the 1990s. For species with complex distribution patterns, the two most common behaviors have been listed.

Codes are as follows:

Status:
- b = breeder
- r = resident
- m = passage migrant, stopping in spring or autumn during longer migration
- W = winter visitor
- d = dispersive visitor, year-round, non-breeding
- f = formerly present
- i = introduced, non-native
- v = vagrant, rare or accidental visits recorded

Quantity:
- # = abundant
- * = rare

Combining codes gives:
- rb = resident (year-round) breeder
- mb = migrant breeder (usually spring or summer)
- rbi = introduced (non-native) resident breeder
- frb = former resident breeder
- m# = abundant migrant; m = fairly common migrant;
- m* = rare migrant
- m#/W* = abundant passage migrant with scarce numbers wintering

[2] The International Union for the Conservation of Nature and Natural Resources (or IUCN) designates the following Red List conservation categories as of 2000:

- EX = **Extinct**: no reasonable doubt that the last individual of a species has died
- EW = **Extinct in the Wild**: species is known to survive only under husbanded, captive, or naturalized conditions, within or outside its original range
- CR = **Critically Endangered**: species is facing an extremely high risk of extinction in the wild in the immediate future
- EN = **Endangered**: species is facing a very high risk of extinction in the wild in the immediate future
- VU = **Vulnerable**: species is facing a high risk of extinction in the wild in the medium-term future

Table 1.2. Cont.

				Range in Near East[4]						
Classification	**Common Name**	**IUCN**	**CITES**	**CYP**	**TUR**	**EGY**	**LEV**	**ARAB**	**IQ/IN**	**AFG**

LR = **Lower Risk**: species has been evaluated and does not fit any of the higher risk categories
DD = **Data Deficient**: species has been evaluated in some way but sufficient data on abundance and distribution to categorize risk are lacking
NE = **Not Evaluated**: species has not yet been assessed against risk criteria

[3] The Convention on International Trade in Endangered Species (or CITES) classifies commercially traded species into:
I = **Appendix I**: all species threatened with extinction that are or may be affected by commercial trade
II = **Appendix II**: all species that are not necessarily threatened with extinction but may become so unless commercial trade is subject to
protective regulation
III = **Appendix III**: all species that are subject to trade regulation by responsible authorities in order to prevent or control exploitatior

[4] The Near East is divided into seven regions to describe bird distribution patterns:
CYP = Cyprus
TUR = Turkey
EGY = Egypt
LEV = Levant, including Syria, Lebanon, Jordan, and Israel
ARAB = Arabian peninsula (including island of Socotra)
IQ/IN = Iraq and Iran
AFG = Afghanistan (old data, often uncertain, in need of field confirmation)

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PART II

ANIMALS IN ART

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CHAPTER TWO

ANIMALS IN ANATOLIAN ART

ANN C. GUNTER

Images of animals as expressions of the divine realm and its cultic celebration form the chief focus of ancient Anatolian art and iconography. From the seventh millennium B.C. onward, a visual record of animal images is preserved in a variety of media and formats, including wall painting, ceramics, stone sculpture and glyptic, wooden furniture, and stone architectural decoration. Ranging in scale from tiny seals to monumental reliefs, these formats encompassed sculptures in the round and vessels as well as complex two-dimensional scenes. To treat them as a unit risks imparting a false homogeneity, or a lack of originality, to the diverse creations of many distinct cultures. Yet, across this immense chronological span, the iconography of animal images—in particular those linked to cultic expression—displays a remarkable continuity that in many ways justly characterizes the region's artistic tradition. Among the most powerful images that survive from ancient Anatolia, they offer dramatic testimony to the transcendent role of animals in the artist's world.

For much of the period this chapter covers, only the visual record provides evidence for media and formats, style and composition; together with archaeological setting, this record discloses the contexts in which animal images occur. A few sites in central Anatolia have yielded cuneiform documents generated by Assyrian business firms that established trade settlements in central and southeastern Anatolia during the era known as the Old Assyrian Colony period (ca. 1900–1750 B.C.). Written in Akkadian, these clay tablets are often sealed with designs depicting local Anatolian deities and rituals of worship. Textual sources for the appearance of animal images, the materials or techniques of manufacture used to fashion and embellish them, and their architectural or other functional setting, are found among the official archives of the Hittite Empire (ca. 1400–1200 B.C.) located at the capital, Hattuša (modern Boghazköy), in north central Anatolia. Many of these texts are concerned with administering the numerous temples and cult centers devoted to the large state

pantheon, which required inventories of cult images and other furnishings. Some describe, often in rich detail, appropriate rituals for celebrating cult festivals either within the capital or elsewhere in the empire. As a group, these records occasionally refer to images that have not survived archaeologically, including works made of perishable materials or that possessed intrinsic value as precious metal and were melted down for reuse in antiquity.[1] They may also supply information helpful in interpreting images among extant works of art. Textual sources raise the possibility, for example, that two large ceramic bull-shaped vessels found together at Hattuša might have been intended specifically to represent Šerri and Hurri, the pair of bulls who drew the chariot of the Hittite Storm God (Bittel 1976: 151, fig. 156).[2] Only the artistic record, however, constitutes a continuous source for reconstructing the sequence and development of animal imagery in ancient Anatolia. The well-attested recurrence of specific, consistent iconography often allows inferences, or at least informed speculation, about the purpose of animal images preserved from periods prior to or later than those illuminated by written sources.

As now established by over a century of archaeological investigation, the Anatolian portfolio of animal representations displays signal differences from that of other regions of the ancient Near East, particularly Egypt and Mesopotamia. To the extent that archaeological context, textual evidence, and the representations themselves permit such inferences, artists in Anatolia depicted animals not to describe the natural environment as a subject in its own right or to evoke it as a setting for human actors, but principally to represent divine beings whose invariable attributes were conceptualized and envisioned in the form of a particular animal. Hunting scenes populated by mortals comprise only a partial exception, since the pursuit of selected species was itself highly ritualized and its representation often "performative," effecting action through its very existence.[3] In artistic representations, deities of the hunt aided humans in capturing bull, stag, and hare. As a result, artistic repre-

[1] Košak (1982), Haas (1994b: esp. 490–501), Bryce (1998: 416–17 [who lists archives at Hattuša and other sites]), all with bibliography.

[2] For large-scale ceramic sculptures of animals from İnandıktepe and other sites, dating to the Old Hittite and Hittite Empire periods, see T. Özgüç (1988: 111–12).

[3] For this term and discussion, see Baines (1996: 351), with additional literature.

sentations do not furnish an illustrated guide to the fauna of ancient Anatolia; they document only a limited repertory, one largely confined to a few species each of large mammals (principally bovines, caprines, and felines), reptiles/snakes, and birds. Wild species dominate surviving images and iconographies, despite abundant evidence for the domestication of sheep, goat, cattle, pig, and dog in south central and southeastern Anatolia as early as the aceramic Neolithic period (ca. 7000 B.C.). In contrast to Egypt, Mesopotamia, and Iran, Anatolia has thus far yielded no evidence for a visual tradition in which animals are cast in the roles of human companion or source of labor subservient to humankind. Figurines of domesticated mammals, chiefly dog, also survive. Animals as divine manifestations appeared in complex iconographies as pedestals or means of transport for other deities, but not, as far as we know, for humans. Even within the comparatively numerous scenes of worship, animal images did not express a wide range of human attitudes toward, or relationships with, the animal world. The sacrifice of domesticated animals, for example, was a common subject on Anatolian group seals of the Old Assyrian Colony period, but there it was enacted with divine participants. Texts establish that animal sacrifice was often practiced during the Hittite Empire, but few works of art seem to depict it. A scene of priests leading ram and goat to ritual sacrifice, carved on a stone relief from the enclosure at Alaca Höyük (ca. 1400–1300 B.C.), remains exceptional (Bittel 1976: fig. 212).

Yet the artistic and iconographical record preserved from ancient Anatolia offers a rich, if highly focused, perspective on human attitudes concerning the animal world. Animals symbolized key forces in the supernatural realm and, simultaneously, the complex, ambivalent relationships humankind negotiated with the world of natural phenomena. Alternately beneficial and destructive, the forces of nature—including the animal world—were engaged with human society in symbiotic relationships both harmonious and adversarial. This dual nature was reflected in, and articulated through, well-defined iconographical modes and forms of representation that seem already highly evolved at the time of their earliest appearance in the ceramic Neolithic period (after ca. 7000 B.C.).

A core group of native Anatolian deities, each symbolized or accompanied by a particular large mammal, has been identified on the basis of highly developed iconographies that can be traced over several millennia. Among the oldest and longest-lived of these is a

Fig. 2.1. Figurine of a seated female flanked by felines, unrestored. Çatal Höyük, Neolithic period (ca. 6500 B.C.). Clay. H. 20 cm. After Mellaart (1967: pl. IX).

god represented in the form of a bull. At Neolithic Çatal Höyük, in south central Anatolia (ca. 6500 B.C.), large-scale plaster reliefs attached to interior walls seem further to define the "bull god" as the offspring of an earth or "fertility goddess" (Mellaart 1967: fig. 40). Another precise and enduring iconography linked a female (goddess?) figure with felines (lion or leopard). She is found among Anatolian cultures extending over a wide chronological and geographical range. Enthroned on or between feline mounts, she appeared in this already developed iconography at Neolithic Çatal Höyük (fig. 2.1). Chalcolithic Hacılar in south central Anatolia yielded clay and stone figurines in the form of a female figure (likewise perhaps divine) embracing or carrying a feline (ca. 5500 B.C.; Mellaart 1970: figs. 28–30). On Anatolian seals of the Old Assyrian Colony period a female deity is seated and accompanied by lion and bird, or stands on a lioness; in the latter form she is attested also at Yazılıkaya, near Hattuša, in the late second millennium B.C. (Bittel 1976: fig. 239). In the first millennium B.C., in the Neo-Hittite

kingdoms of southeastern Anatolia and those of Phrygia, Lydia, and Lycia, female deities named Cybele and Kubaba(t) are often depicted with a feline companion (van Loon 1991: pls. IX, XXXVIIb, XLI, XLVb, XLVIIa; Hanfmann 1983a: 224 and pl. 43; Naumann 1983; cf. Roller 1999: 49, 130–31 and fig. 38). A third principal deity appears in the form of a stag. In anthropomorphic form he is a hunting god accompanied by or standing on a stag and holding a raptor; he may also carry additional animal attributes, often a hare. Figurines and other objects produced from relatively inexpensive materials, most frequently clay and stone, were often fashioned as large mammals, particularly bull and deer or other ruminant (wild goat, gazelle). As such, they could have exemplified important deities, represented sought-after game, or both.

Master and mistress of animals were also deities of the hunt, symbolized or accompanied respectively by a lion or other feline and a stag or wild goat. Members of animal domains other than that of large mammals figure in the standard iconography of these deities. Smaller animals, particularly birds, appear frequently, although not invariably. Crab and lizard may be present alongside the large mammals grouped harmoniously with the master or mistress of animals, perhaps serving as representatives of the greater animal universe over which these deities held sway: sea and water animals, and reptiles/snakes. The further realms of these deities are signified by fantastic creatures or *Mischwesen*, often sphinxes, who appear in close proximity to animals of the natural world.

Bridging the long gap between the Chalcolithic and Old Assyrian Colony periods are a number of metal artifacts in the form of, or decorated with, images dominated by bull and stag. The greatest quantity and most elaborately ornamented examples were excavated from a group of lavishly equipped shaft graves at Alaca Höyük in north central Anatolia, dating to the Early Bronze Age (ca. 2300 B.C.). Visually striking and intricately crafted, these metal objects have been plausibly identified as standards and sistra intended for cult processions and performances. Several are cast from a copper alloy over which sheets of silver or electrum were wrapped around antlers, horns, head, or feet, or used to form patterns on the body, yielding a rich, polychrome effect (fig. 2.2; Bittel 1976: figs. 16, 18–19). Some of the standards combine two different large mammals, such as stag and bull, perhaps implying a precise relationship between their divine manifestations.

Fig. 2.2. "Standard" mount in the form of a stag. Alaca Höyük, Early Bronze Age (ca. 2300 B.C.). Bronze and silver. H. 52 cm. Photo courtesy of the Museum of Anatolian Civilizations, Ankara.

With a few exceptions, animals or animal parts were not themselves employed as vehicles for artistic representations.[4] At Çatal Höyük, multiple bucrania and horn cores were arranged in a parallel series one behind another and imbedded in mud plaster "benches" in several interior rooms. Plastered and often painted with geometric and figural patterns, bull skulls (and sometimes those of rams) were also attached to walls, from which they appeared to emerge; they

[4] There does not seem, for example, to have been an Anatolian counterpart to the mollusk shells (*Tridacna squamosa*) of the Indian Ocean and Persian Gulf region, which during the early first millennium B.C. were brought to the Levant and elaborately engraved, then exported elsewhere in the Near East, Aegean, and eastern Mediterranean (Stucky 1974).

were variously suspended singly, in neat horizontal rows, or "stacked" one above the other. These sculptures formed from skulls coexisted—even in the same room—with wall reliefs depicting the bull in profile, fashioned entirely from plaster and paint (Mellaart 1967: esp. figs. 34–36). Elaborately carved furniture decoration, made from hippopotamus ivory probably imported from the Levant and elephant ivory perhaps from more distant locations, is first attested in the Old Assyrian Colony period at Acemhöyük and Kültepe in central Anatolia (Caubet 1991). Few artifacts of this material survive from the Hittite Empire period, but texts reveal that ivory was sometimes used to fashion or decorate cult furnishings. An inventory from Hattuša lists an ivory bed for the Storm God of Nerik, set on lion feet inlaid with gold (Košak 1982: 12–13 [CTH 241.2, 1]). Works of art were sometimes also made specifically and exclusively *for* animals. A silver breastplate and probably other equestrian trappings made of ivory and silver were recovered from Phrygian tumulus burials at Bayındır/Elmalı near Antalya, in southern Anatolia. They provide a glimpse of the costly materials and fine craftsmanship these tomb owners lavished on prized horses around 700 B.C. (Özgen and Özgen 1992: no. 49).

While artists often depicted animals with considerable realistic detail, their aim was not a naturalistic rendering in the modern sense. As in many cultures of the ancient Near East, neither life-like realism nor scale was critical to the efficacy of an image intended as an apotropaion or talisman. Hittite inventory lists mention tiny silver frogs, presumably pendants or parts of necklaces (Košak 1982: 166 [KBo 18.165b:2]). Art was also an important means of defining or bringing into focus altogether imaginary inhabitants of the divine or semidivine realm, fantastic creatures that combined parts of different animals (or animals and humans), or sported wings. Even among the earliest preserved examples, the formal arrangement of animal figures within a composition often appears to reflect established iconographies and did not aim to capture what artists could have observed firsthand. Some of these arrangements may have conveyed conceptual relationships between or among the animal figures that are now inaccessible to modern viewers. The antithetical pairing of animals, for example, is attested already at Neolithic Çatal Höyük in the form of plaster wall reliefs of painted leopards (fig. 2.3; Mellaart 1967: pl. VI). The same composition unites a pair of standing lions on a stamp seal design of the Hittite Empire period

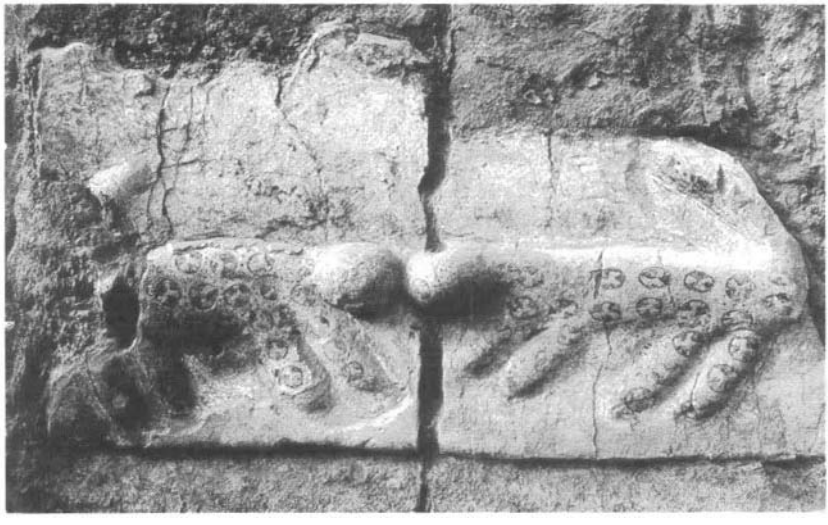

Fig. 2.3. Wall relief of a pair of leopards. Çatal Höyük, Neolithic period (ca. 6000 B.C.). Plaster and paint. H. over 1 m. Photo courtesy of the Museum of Anatolian Civilizations, Ankara.

(Bittel 1976: fig. 188). The main scene at Yazılıkaya depicts the meeting of two processions of divinities and consists of an antithetical pairing of the chief male and female deities (Bittel 1976: fig. 239). Animals on which a divine figure stands and possessed of attributes that relate to the divinity's own qualities are characteristic of Anatolian art from the Old Assyrian Colony period onward. This relationship of figure to animal was a divine prerogative, and within a strictly Anatolian (and Mesopotamian) tradition was never extended to humankind.

Conventions of representation varied with the type, location, and function of images. The two-dimensional format of many media—seals, wall paintings, reliefs—perhaps encouraged a standard profile rendering of all figures, including animals and animal-shaped objects. At Çatal Höyük, static, symbolic renderings of animals often in frontal aspect coexisted with two-dimensional hunting scenes where animals are shown in profile (Mellaart 1967: fig. 48). A lack of realism, or what appear to be inconsistencies in representations of animals, may be attributed to the artist's pursuit of conceptual clarity or perhaps a more compelling visual effect. In Old Hittite seals (ca. 1700–1400 B.C.) and on a relief from Alaca Höyük, the bull is shown in profile but its horns are rendered frontally (van Loon 1985: 13–14). Like stylistic details may connect two- and three-dimensional works from

the Hittite Empire period. Two silver vessels, one each in the form of a kneeling stag and kneeling bull, display an intricately patterned musculature consisting of tripartite muscles, y-shaped veins, and shoulder blades configured like shields (Bittel 1976: figs. 169, 178). A similar pattern appears on the Alaca Höyük reliefs depicting a stag hunt and the worship of a bull image (Bittel 1976: figs. 214, 224, 225).[5] Another relief from Alaca Höyük preserves an arresting lion figure: its profile body suggests rapid movement, yet its frontal head abruptly halts the animal's progress (Bittel 1976: fig. 226). This juxtaposition of deliberately stylized features with a convincing naturalism in the modeling or carving of animal figures seems unlikely to be solely the result of contemporaneity, and we may contemplate symbolic associations or meanings. The continuity of precise, well-formulated iconographies independently implies conceptually fundamental relationships between divine attribute and animal. Sometimes they are linked by a clear associational logic; on Anatolian seals of the Old Assyrian Colony period, a war god who effected the destruction of human life was accompanied by the two natural enemies of lion and goat (van Loon 1985: pl. Vc). A familiar cultural order was sometimes imposed on the visual expression of the divine realm, as when animals were employed as a means of transportation: a pair of bulls pulled the chariot of the Storm God. Likewise, animals of the sacred sphere as depicted by the artist occasionally behaved according to the rules of the natural world order. Among works dating to the second millennium B.C., falcon and eagle, birds of prey, grasp their victims on seals, relief sculptures, and in an ivory group (fig. 11.6; Bittel 1976: fig. 47). On an Anatolian style seal impression, the war god rests his feet on a lion that seems to have eaten a goat. The lion's victims may be shown as animal heads, while the god's victims are rendered in parallel fashion as headless human corpses.

Abbreviated or partial images could, on the principle of *pars pro toto*, stand for the whole creature. An early example is found at Neolithic Çatal Höyük, where bulls' horns or skulls apparently represented the "bull god" (Mellaart 1967: 77–129). Lions and sphinxes guarded the city and palace gates of Hittite Alaca Höyük and Hattuša, protecting all within those enclosures from both visible and invisible enemies (Bittel 1976: figs. 209–211, 258, 259). Rendered

[5] M. N. van Loon offers these important observations, with further discussion (1985: 13–14).

as monumental protomes emerging from massive stone walls from which they were inseparable both physically and metaphorically, the frontal aspect emphasized the formidable strength and apotropaic power of lion and sphinx at Hattuša. Another partial image figures in the complex iconography of a god of the underworld carved in the funerary chamber at Yazılıkaya, a complex near Hattuša dating to the thirteenth century B.C. The sword hilt is formed by the profile head of a capped male figure above two addorsed lion protomes; below these are two complete lion figures facing downward, from whose open jaws issues the sword blade (fig. 11.5; Bittel 1976: fig. 254). Sometimes what appear to be partial or abbreviated images, however, were in fact complete objects or works of art. Cult vessels in the form of an animal's head, for example, were occasionally represented in two-dimensional scenes (Bittel 1976: fig. 177). These are matched by archaeological counterparts made of metal or clay that consist of a head only, or a head and neck. This archaeological evidence can in turn be correlated neatly with Hittite texts describing vessels made of precious metal in the form of an animal's head or head and neck.[6]

Circumstances of preservation, together with modern excavation priorities, have tended to place primary emphasis on works of art—including animal images—deriving from funerary, palatial, and religious contexts at ancient sites in Anatolia. Evidence for the distribution or availability of images in other kinds of settings is therefore comparatively scarce. Many houses in the merchant settlements at Old Assyrian Colony period sites, whose contents were often well-preserved, contained tiny lead figurines made from stone molds and other representations of deities, among which animals predominate. The figurines were apparently common personal or household possessions, certainly made locally (Emre 1971). Art served an array of cult requirements, including images for worship and other equipment whose materials, form, and iconography were probably chosen and closely supervised by temple personnel. The creation and circulation of animal images that figured in royal and divine iconographies must have ordinarily been under the control of political and religious elites. Representations of deities and cult images carved on official and personal seals were more widely distributed and

[6] Recent discussions include the extensive bibliographies on this subject in van Loon (1985: 29–32), Haas (1994b: 530–38), and references cited in n. 10.

reproduced. Sealings on tablets, envelopes, and bullae of the Old Assyrian Colony period, and on stamp seals and sealings of the same period and the subsequent Old Hittite and Hittite Empire periods, attest to this replication and viewership. Works of art made for rulers or otherwise sanctioned by tradition—palace reliefs, cult objects, seals of office—often exhibit a remarkable homogeneity of form and style over an extensive geographical range. Zoomorphic vessels of the Old Hittite period, whether from Asarcık/Ilıca in west central Anatolia or İmikuşağı in the southeast, are typologically and stylistically very similar and are fashioned in the form of a restricted group of large mammals and birds, most notably the stag, bull, and eagle (Bittel 1976: fig. 166; Sevin 1994).[7] Animal images of the Hittite Empire period likewise display a highly consistent iconography and style over an even more imposing geographical sweep. Here we may see the reflection of "court style" canonical imagery, as works of art inscribed for rulers or state officials surely imply. A griffin image on a bronze bowl found near Kastamonu, in northern Anatolia, closely resembles a griffin carved on the seal of Ini-Teshub, prince of Carchemish (thirteenth century B.C.), a small kingdom on the Syrian border of the Hittite Empire (Bittel 1976: fig. 182; Emre and Çınaroğlu 1993: 699).

Beginning in the early second millennium B.C. a large corpus of animal images appears on cylinder seals carved in a local, Anatolian style, impressions of which survive on a number of cuneiform records. These images offer unprecedented access to the repertory of animal imagery and iconography in Anatolia. The cylinders were used to seal correspondence and other documents relating to a long-distance exchange in metals and textiles conducted between central and southeastern Anatolia, northern Syria, and northern Mesopotamia. The greatest quantity of these sealed tablets, which formed the archives of merchants whose firms were headquartered in Aššur, has been recovered from the site of Kültepe near Kayseri in central Anatolia. Many of the personal and official seals preserved on the tablets were carved in the glyptic styles then current in Mesopotamia and Syria. In addition, a large group was carved in a native Anatolian style, furnishing unparalleled sources for the iconography and cult of deities worshiped by local residents with whom the Assyrian

[7] A comparable homogeneity existed among ceramic artifacts produced throughout the Hittite Empire, extending even to simple shapes in unadorned, utilitarian wares (Gunter 1991: 105).

merchants conducted various transactions in connection with the long-distance trade (N. Özgüç 1965). The rectangular field afforded by the adopted Mesopotamian cylinder allowed for complex, multifigural compositions illustrating scenes of ritual and worship. Supplementing the Anatolian style cylinder seal designs are seal designs preserved on a number of bullae recovered from Acemhöyük, which represent the traditional Anatolian form of the stamp seal. The elaborate, highly consistent (standardized) iconography manifested in the seal designs implies prototypes of which few have survived but that indicate continuity with the art of earlier periods as the source of belief and iconography on which seal carvers drew. Chief among the native Anatolian divinities represented in the seal designs are three deities, each of whom stands on the back of a now-familiar trio of large mammals: bull, stag, and lion. Many Anatolian group seals depict divinities equipped with an array of specific attributes of headgear, dress, and implements. These images are most plausibly explained as two-dimensional illustrations of actual cult images in whose presence various rituals were enacted, including the offering of food and drink and the sacrifice of animals, and which therefore document contemporary sculptures that have not survived archaeologically.

In the glyptic repertory of the Old Assyrian Colony period, the bull appears consistently as the key iconographic element for various Anatolian storm gods. Seals of Anatolian style depict a god in the form of a male figure standing on the back of a bull and carrying a trident or lightning bolt. Another variant shows the god in the form of a bull, sometimes surmounted by a cone on which a bird is occasionally perched. In this latter form the bull is the recipient of worship and should therefore be understood to represent a cult image, as illustrated in the Old Hittite period on a polychrome relief vase from İnandık (T. Özgüç 1988: pl. 46) and on a much larger scale on a carved stone orthostat from Alaca Höyük (fig. 2.4; Bittel 1976: fig. 214). These iconographical variants probably reflect regional differences in the iconography of the storm god, perhaps extending to actual differences among the cult images housed in various temples. Hittite texts establish that many towns had their own storm gods, for which iconographical variants within a largely homogeneous type might well be expected. The Anatolian Storm God seems to have been not a single deity but probably a group of related deities,

Fig. 2.4. Orthostat relief of a Hittite king and queen in front of altar facing an image of a bull atop a pedestal. Alaca Höyük, Hittite Empire period (ca. 1400–1300 B.C.). Andesite. H. 1.26 m. Photo courtesy of the Museum of Anatolian Civilizations, Ankara.

perhaps originally with jurisdictions in different regions of Anatolia or over particular cosmic phenomena.[8]

Images of native animals coexisted with the occasional intrusion of alien species and alternative iconographies from other regions of the Near East, and artists often combined them successfully to create new modes of expression. In some instances, as among Anatolian seals of the Old Assyrian Colony period, Anatolian representations of animals drew on established Mesopotamian traditions and were clearly influenced by them. Here, for the first time in Anatolia, gods are depicted in anthropomorphic form with their attributive animals in an iconographic tradition known also from Mesopotamia and Syria. A donkey god, protector of caravans, was introduced to Anatolian religious iconography as a result of the long-distance trade in metals and textiles conducted between Assyrian merchants and residents of central and southeastern Turkey and northern Syria during the early second millennium B.C. Representations of this god appear in the material culture of the presumed local inhabitants, on tiny lead figurines, as well as on Anatolian group cylinder seals employed by Assyrian merchants (Bittel 1976: fig. 87). Similarly,

[8] For Anatolian storm gods see Leinwand (1984) and van Loon (1985: 7–8).

foreign contacts ushered in images of monkeys alongside native Anatolian animal divinities depicted on seals and ivories of the Old Assyrian Colony period. Depictions of this large mammal were probably introduced via imported works of Egyptian and Mesopotamian art (Mellink 1969). On Anatolian style seals, monkeys carry vases or vessels, performing rituals for the worship of the storm god. Thus, the artists of the seal designs did not simply copy imported images of these exotic creatures, but incorporated them into original compositions that functioned additionally within the context of native iconographies.[9]

Cult images in the form of animals and animal-shaped vessels were often shown in the company of other divine images or attended by worshipers or cult personnel. While few certain examples of cult images have survived archaeologically, texts and representations in combination offer information on their materials, dimensions, and appearance. A large group of Hittite texts dating primarily to the last quarter of the thirteenth century B.C., including accounts of festivals, cult inventories, booty lists, and descriptions of the renovation or reform of cult equipment, are particularly informative. Some of these images were quite small, only a hand's width in height; few exceeded one cubit (about 50 cm). Both human and animal-shaped images were often fashioned of wood overlaid with sheets of silver, their key features—eyes, head, weapons or other attributes—covered in gold.[10] The luminous, polychrome effect these comparatively small images must have created is reminiscent of the animal-shaped standards and sistra from Early Bronze Age Alaca Höyük with their silver- or electrum-wrapped faces, feet, and antlers, perhaps indicating that the latter served not only as cult symbols employed in acts of worship but also as the objects of cult attention themselves.[11] Many Anatolian style seals depict cult images, often as the focus of worship. They supply detailed information on the iconography of these images, including headgear, dress, and attributes

[9] These connections have gained in importance in the light of evidence that Anatolia and Syria may have acquired ivory in Egypt, which may in turn have obtained it from a more distant source in South Asia (Caubet 1991).

[10] Recent discussions with extensive bibliographies include Güterbock (1983a; 1995); see also the references cited in n. 6 above.

[11] Descriptions of cult statues on which gold and silver were combined may also support an interpretation of the female statuette from Early Bronze Age Hasanoğlan, made of silver and gold/electrum, as a cult image (Bittel 1976: figs. 30–31).

(weapons or implements) held or carried, as well as platforms, altars, or other furnishings that were presumably placed below or near them.

Vessels formed in part or entirely in the shape of an animal constitute a large category of cult-related equipment preserved from ancient Anatolia. Such vessels are commonly designated as rhyta, a Greek word that refers to their pouring function. Examples survive primarily in clay, sometimes in metal, and most often depict a restricted group of large mammals—bull and lion, less frequently stag—whose features may be outlined or embellished in paint. Early examples are in the form of felines and ruminants; a vessel in the form of a gazelle comes from Chalcolithic Hacılar (Mellaart 1970: fig. 77). Animal-shaped vessels made of fired clay, decorated in dark paint on a light ground or slipped in a monochrome red or brown, are a characteristic product of the Old Assyrian Colony period settlements at Kültepe, Boghazköy, Alişar Höyük, and Acemhöyük, shown standing, kneeling, or crouching (Bittel 1976: figs. 64–69, 72). Monochrome versions continued into the Old Hittite and Hittite Empire periods, when they were certainly matched by counterparts made of metal, of which a few survive. A beautifully preserved example made of silver, unfortunately lacking archaeological context, is modeled in the form of a kneeling stag; a frieze of figures in low relief depicting the hunting god encircles the vessel's neck (figs. 2.5, 2.6; Bittel 1976: fig. 169).[12] Vessels were fashioned either in the form of a complete animal or only part of an animal, usually the head and neck (Bittel 1976: figs. 156–165; Emre and Çınaroğlu 1993: 676–678, with bibliography). The Hittite texts establish that animal-shaped vessels, like other forms of cult images, could receive libations and offerings.[13] Given the continuity of cultic expression widely attested to with respect to animal imagery, we can suspect that zoomorphic vessels preserved from much earlier, nonliterate cultures may likewise have been the objects of cult attention.

Animal images created for purposes other than cult included objects with persuasive functions—amulets, talismans, and other apotropaia—of which a few have already been mentioned. Here Anatolia shared certain traditions concerning animals (and objects) with large regions of ancient western Asia and the eastern Mediterranean world.

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[12] Formerly in the Norbert Schimmel collection, the object is now in the permanent collection of the Metropolitan Museum of Art (Muscarella 1992).

[13] See van Loon (1985: 32) and Haas (1994b: 495, 533), both with further references.

Fig. 2.5. Vessel in the form of a kneeling stag. Hittite Empire period (ca. 1400–1200 B.C.). Silver with gold inlay. L. 17 cm. Courtesy of the Metropolitan Museum of Art.

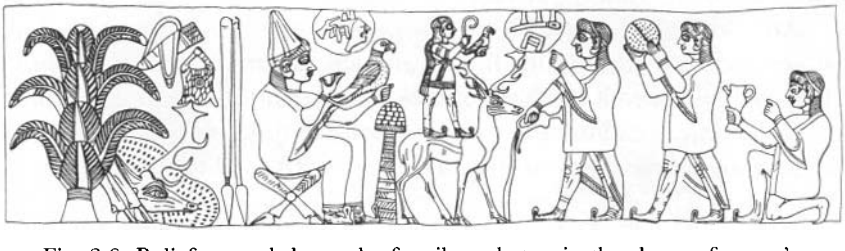

Fig. 2.6. Relief around the neck of a silver rhyton in the shape of a stag's forequarter. Hittite Empire period (ca. 1400–1200 B.C.). Courtesy of the Metropolitan Museum of Art.

Apotropaia in the form of guardian figures of animals and fantastic creatures, amulets in the form of protective deities or demons, and zoomorphic vessels, all find counterparts across multiple cultures and vast distances, including the Aegean, Mesopotamia, Syro-Palestine, Egypt, and Iran. Eagles crown painted ceramic tower vessels from Old Assyrian Colony period Boghazköy, which are further embellished with animal-head protomes in the form of bull and ram (Bittel 1976: fig. 50). Objects of this kind help to furnish an impression of similar decoration in the form of all or part of an animal on contemporaneous architecture or other large-scale works, as does the ceramic boat with a ram's head finial from the same period (Bittel 1976: fig. 71).

A few works of art drop tantalizing clues to the existence of visual narratives, some perhaps devoted to epic cycles in which animals or mythical beasts appear as recognizable figures in particular episodes. Wall paintings from Çatal Höyük depict men hunting bovines, cervids and birds, and men dancing at the hunt (Mellaart 1967: fig. 48). Programs of architectural decoration, such as friezes, may incorporate narratives of this kind. A stone orthostat from Malatya (Arslantepe) in southeastern Anatolia, of Neo-Hittite date (ca. 950–900 B.C.), preserves a carved scene of gods battling a snakelike monster or serpent that some have interpreted as the mythical Illuyanka (Bittel 1976: fig. 279). Minor arts, too, occasionally hint at the existence of narratives or large-scale prototypes or contemporaneous works, such as wall paintings, that have not survived. Fragments of a painted clay bathtub found at Acemhöyük, dating to the Old Assyrian Colony period, depict a spearsman apparently in pursuit of various game, including fish, birds, boar, and leopard (Bittel 1976: fig. 49; Mellink 1993: 426–32, with further references). A recent chance find from Kastamonu, in north central Anatolia, may also imply that developed visual narratives involving hunting legends or rituals may have been more common than present evidence would indicate. Friezes depicting tiny figures in elaborate scenes of hunt and of struggle between lion and bull decorate a bronze bowl inscribed for Taprammi, an official active during the second half of the thirteenth century B.C. (Emre and Çınaroğlu 1993: 679–713). Do these scenes illustrate the hunting exploits of a particular historical figure, or are these heroic hunters? These clues to large-scale narratives pertaining to the theme of hunting are important not only as intriguing hints of what may have been lost,

but also as potential evidence for replication and the existence of authoritative, canonical, or standardized images that could have circulated via the objects and their artists. Were certain legends perhaps even known sufficiently well that a wide viewership could be expected to recognize them through (abbreviated) visual narratives alone?

While the overall impression is one of explicit, sustained continuity in animal images and iconography, Anatolian artists also adapted creatively as trade or ethnic movements introduced previously unknown deities and the demands of cult or theological developments required corresponding changes in visual expression. In the case of the Anatolian seals of the Old Assyrian Colony period, adopted formats offered new vehicles with which to illustrate a rich, diverse pantheon and the forms of its worship. Images of animals on both miniature and monumental scale were carefully rendered and compelling. The dominance of tradition notwithstanding, artists in Anatolia consistently succeeded in conveying the awe-inspiring qualities and sheer physical magnificence of their animal subjects. Few, if any, images of their human subjects can compete.

CHAPTER THREE

ANIMALS IN EGYPTIAN ART AND HIEROGLYPHS

PATRICK F. HOULIHAN

ANIMAL IMAGERY DURING PREDYNASTIC AND EARLY DYNASTIC EGYPT[1]

Humans and animals have an extremely long history of relations in Egypt. A record of some of their earliest interactions are captured in thousands of drawings (petroglyphs) executed on rock faces in the western and eastern Deserts, and along the cliffs bordering the entire length of the Nile Valley in Upper Egypt and Lower Nubia (W. M. Davis 1979; 1984; Hoffman 1991: 233–39; Otto and Buschendorf-Otto 1993). The oldest series of representational carvings probably originates from the Badarian or Amratian (Naqada I) periods, although rock drawings are notoriously difficult to date. The subject matter of these compositions frequently consists of an assortment of indigenous big game animals, which are sometimes being trapped or pursued by huntsmen and their dogs. The beasts encountered most routinely include ostriches, giraffes, aurochs, Nubian ibexes, antelopes, and other horned quadrupeds; less common figures are Nile crocodiles, hippopotamuses, African elephants, and rhinoceroses. With the advent of animal domestication, herding long-horned cattle also becomes a recurring theme. Although schematically fashioned, some of the more accomplished chase episodes have tremendous vitality and possess a certain artistry (Houlihan 1986: fig. 2; 1996a: fig. 30). Such works are often described in the literature as being connected with magical practices, for example, hunters attempting to conjure up desired quarry. Whatever the intention may have been, these portrayals are a brilliant introduction to the art of

[1] Susan M. Houlihan and Mary Beth Wheeler kindly read early drafts of this essay and offered numerous suggestions for its improvement. The references cited here tend to be selective. The following works have extensive bibliographies dealing with the various birds, beasts, and bugs represented in ancient Egyptian iconography (Houlihan 1986: xiv–xxix; 1996a: 221–36; Boessneck 1988: 182–97).

animal representation that will continue to flourish and claim many masterpieces in Egypt over the millennia (Brunner-Traut 1986).

Animal imagery dominates early Egyptian art. Especially just before and during the time of the emergence of phonetic writing in the Nile Valley, the animal world, both real and imagined, served as a kind of symbolic language, visually communicating theoretical concepts (Baines 1989: 473–74; Kemp 1989: 46–53; 1991: 207–8). Through the illustration of animals in this shared system, particularly as part of the decoration on costly luxury and votive objects, the ancient Egyptians were able to express important ideas about kingship, the unification of their country under one ruler, and the powers of the cosmos in a manner that was later supplanted by the use of hieroglyphic inscriptions. There have been some inspired attempts at interpreting the complex underlying symbolism of these faunal motifs, and some headway in this area has been achieved (Williams and Logan 1987; Williams 1988; Ciałowicz 1991: 58–81; W. M. Davis 1992; Baines 1993; H. S. Smith 1994: 364–67). Nevertheless, much about their significance remains imperfectly understood, and conclusions are often speculative and a matter of continued controversy. In the present state of our knowledge about this aspect of early Egypt, then, it is certainly easier to appreciate many of these animal images as fine artistic creations, rather than explaining the thought processes that prompted their portrayal. Also appearing during late Predynastic times are several figural elements, most notably fabulous creatures, which are unmistakable Mesopotamian borrowings (Fischer 1987: 15–16; H. S. Smith 1992; Pittman 1996: 14–22). The principal categories in which birds and beasts are met with in art during the Predynastic and Early Dynastic periods in Egypt can be summarized (Capart 1905; Vandier 1952; Kantor 1974; Leclant 1978, 41–57; Adams and Ciałowicz 1997).

Predynastic craftsmen of the Amratian and Gerzean (Naqada II) periods produced numerous schist (or graywacke) palettes in very simplified shapes of various species (African elephants, hippopotamuses, antelopes, rams, turtles, fishes, and birds), which were intended for grinding malachite into green eye-paint for medicinal and cosmetic purposes (Ciałowicz 1991: 19–40). On these, the salient morphical aspects of the animals have been captured successfully. Many of the palettes have a hole for suspension when not in use, or, possibly, the smaller ones could also have been worn as pectorals. These zoomorphic objects are among the commonest grave

goods during these epochs, and their presence in burials is, in all likelihood, linked with magical and religious practices. They are the immediate forerunners to the group of splendid commemorative or votive decorated dark schist palettes dating from the Late Predynastic period (Naqada III) to the beginning of the First Dynasty, culminating in the monumental Narmer Palette, that feature on them a considerable diversity of superbly observed wild, domestic, and mythological beasts (Vandier 1952: 373–88, 570–99; Fischer 1958; Asselberghs 1961; Ciałowicz 1991: 41–57). Also pictured here are creatures clearly representative of the victorious monarch and royal power in general: bull, lion, and the Horus falcon. From the Late Predynastic period also comes a collection of carved ivory pieces, more-or-less utilitarian, principally knife and comb handles, which are adorned with a bestiary of animal life in raised relief, similarly arranged into a series of registers (Asselberghs 1961; Churcher 1984; Hoffman 1991: 298–303; Ciałowicz 1992; Dreyer 1993: pl. 6; 1998: fig. 7). The choice of fauna incorporated into designs on these objects was not a haphazard selection; they probably represent emblems of towns or districts.

Painted decoration on Predynastic ceramic wares of the Amratian and Gerzean periods exhibit vignettes of river and desert landscapes, with some of the characteristic denizens of these environments (Vandier 1952: 267–88, 332–65; Asselberghs 1961; Bourriau 1981: 26–29; Page-Gasser and Wiese 1997: nos. 15–16). The hunt is a standard theme on countless decorated pottery of both these cultural phases. Even though the natural world is rather abstractly treated in the compositions, the diagnostic silhouettes of the wildlife frequently allows for accurate identification. Boating scenes on some Gerzean period vessels display appealing long files of greater flamingos, Nubian ibexes, and other horned quadrupeds painted in a dark red hue against a buff-colored background (Houlihan 1986: fig. 48; 1996a: fig. 42). One finds some of these same motifs, and many others, on the oldest known wall painting from ancient Egypt, the celebrated "painted tomb of Hierakonpolis" (Asselberghs 1961: pls. XXIV–XXV; Spencer 1993: fig. 20; Decker and Herb 1994: pl. CXXXI). This work of Gerzean period date also exhibits one of the earliest and most striking instances of Mesopotamian influence on early Egyptian iconography, the image of a heroic figure dominating a pair of large rampant lions (W. S. Smith 1981: fig. 17).

Animal sculpture in the round had an early genesis in Egypt. Pre-

dynastic potters molded vases into the likness of hippopotamuses, oxen, hedgehogs, frogs, birds, and fishes, and these were routinely deposited in human burials. Animal-shaped containers and figurines in clay, flint, ivory, and various hard stones were also included amongst grave goods (Bille-De Mot 1943, figs. 29–38; Priese 1991, no. 4; Spencer 1993, figs. 8 and 25; Page-Gasser and Wiese 1997, nos. 19–20). By the First Dynasty, this custom had expanded to placing limestone and faience zoomorphic statuettes at temple sanctuaries as *ex votos*, with the addition of new species, including pigs, falcons, baboons, lions, and crocodiles (Seipel 1983: nos. 9–13; Needler 1984, 351–67; Dreyer 1986: pls. 24–39; Saleh and Sourouzian 1987: no. 11). Some delicately carved ivory gaming pieces of recumbent lions and lionesses are evidenced from this epoch as well (Steindorff 1946: no. 6; Adams and Jaeschke 1984: figs. 19–20; Saleh and Sourouzian 1987: no. 12; Vassilika 1995: no. 3). There are several remarkable extant animal sculptures in stone of fine workmanship from the terminal Predynastic and the Early Dynasty period (Vandier 1952: 971–78; Anonymous 1967/68; Cooney and Simpson 1976; Fazzini *et al.* 1989: no. 5; Kemp 1991). Unquestionably the most powerful of the group, and one of the first monumental sculptures in the round from ancient Egypt, is the magnificent calcitic alabaster statue of a seated baboon deity, on which is preserved the name of King Narmer (Priese 1991: no. 8; Krauss 1994). This object was presumably a royal votive offering to an early cult temple. Also impressive, particularly for their sheer mass (each measure 1.60 m in length and weigh half a ton), is a pair of recently rediscovered and restored limestone lions from a temple at Qift (ancient Koptos), dating to the beginning of the First Dynasty (Adams and Jaeschke 1984; Adams and Ciałowicz 1997: fig. 32).

It was also near the close of the Late Predynastic period, and during the Early Dynastic period that the ancient Egyptians devised their hieroglyphic script, a substantial portion of which was composed of various pictures having to do with the animal world (fig. 3.1; Letellier and Ziegler 1977: 103–5; Héry and Enel 1993: 67–102). It is impossible to make a sharp distinction between Egyptian art and the ornamental hieroglyphic script, as the latter is really a miniature form of art in its own right and serves as a complementary part of an overall artistic composition (Fischer 1986: 24–46). Each character of Egyptian hieroglyphs, when carefully executed and painted, can stand alone and possess its own individuality and charm, and in detail

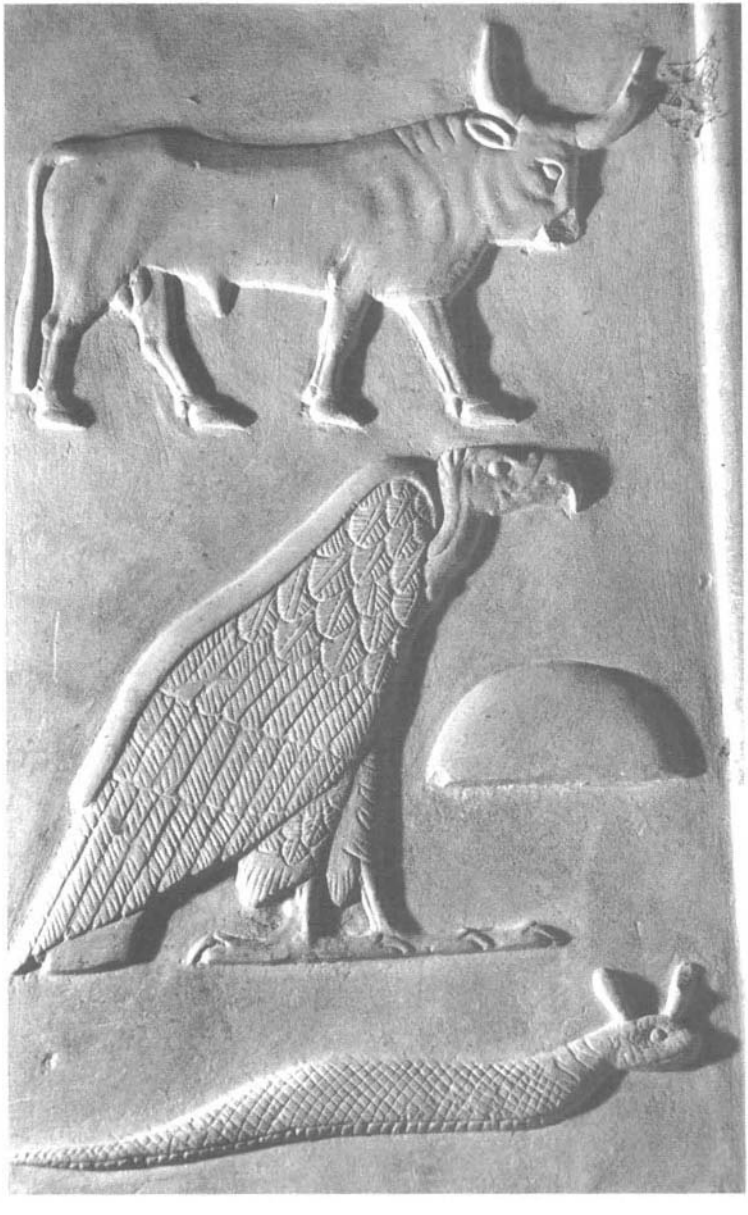

Fig. 3.1. Detail of ornamental hieroglyphs from the *sed*-festival shrine of Sesostris I at Karnak (12th dynasty). These animal-signs, representing a long-horned bull, a lappet-faced vulture, and the deadly horned viper, spell Kamutef "bull of his mother," an epithet of the gods Min and Amun. Photo courtesy Patrick F. Houlihan.

can often compare with that of any large-scale representation. In Sir Alan Gardiner's classic *Egyptian Grammar* sign list, no fewer than 176 standard hieroglyphs are enumerated that relate to mammals, birds, fishes, amphibians, reptiles, invertebrates, and other lesser creatures (Gardiner 1957: 458–78). Avian life, in particular, is richly represented in the script. A number of species that regularly functioned as phonetic hieroglyphs are rarely ever encountered outside of the writing system, as in the case of the saddle-billed stork, Egyptian vulture, barn owl, helmeted guineafowl, and horned viper. Once the iconography of bird and beast hieroglyphs had been established during this early age, these signs continued to be used, more-or-less unchanged, throughout the entire length of pharaonic history and beyond, right down to the fourth century C.E. (Fischer 1989).

DIVINE IMAGES IN ANIMAL FORM

The ancient Egyptians invested certain members of the animal world, especially nondomesticates, with divine attributes; moreover, gods and goddesses could manifest themselves in animal guise. Egyptian religion possessed two types of animal cult, one in which a single sacred creature was chosen at a given time to serve as the god's living embodiment, such as in the case of the Apis bull; the other in which an entire species was accorded reverence and ritually mummified, as with the sacred ibis associated with the god Thoth (Spencer 1982: 195–213; Meeks 1986; Sadek 1987). There is an enormous amount of iconographic evidence relating to the Egyptians' varied religious beliefs and practices involving sacred birds and beasts (see chapter 12). Much of this material dates from the Late Dynastic and Ptolemaic periods, when these cults were at the height of their popularity and influence. A widely known characteristic feature of Egyptian religious imagery, from the Early Dynastic period onward, is the therianthropic portrayal of divine beings, chiefly animal-headed gods, such as the god Sobek, who is portrayed as a crocodile-headed man or the goddess Bastet, who appears as a cat-headed woman (Hornung 1982: 109–28; Fischer 1987: 13–15). These uncanny composite figures of human and animal are explained by the hieroglyphic nature of the Egyptian system of representation.

One of the very earliest illustrations of an Egyptian deity in theriomorphic form is a standing(?) dark schist jackal (40 cm in length),

possibly depicting the funerary god Anubis, of late Gerzean period date, from El-Ahaiwah (W. S. Smith 1981: fig. 6; Houlihan 1996a: fig. 58). The renowned calcitic alabaster statue of a baboon deity from the reign of Narmer mentioned above is another such example. A fragment of limestone relief from the extraordinary "Chamber of the Seasons" in the Fifth Dynasty solar temple of Neuserre at Abu Ghurab pictures a file of captive male pelicans under the charge of three guardians who are identified as priests (Wreszinski 1936: pl. 84; Edel and Wenig 1974: pl. 35; Priese 1991: no. 22). The cryptic caption inscribed above this scene is most intriguing. The text reads, "when the sun sets and spends the night in his temple no mating (between the birds) is allowed. When the sky lightens (again) the power of procreation may start again, since the sun is (again) reigning over both sexes" (Meeks 1990: 44). The pelican had mythological associations relating to the rising and setting sun, and this group of birds must have been housed in the temple precinct for solar cult purposes. As such, it is among the oldest attestations in Egyptian art of keeping live sacred creatures. A few cult statues of animals in superbly worked precious metals have been preserved, the Horus falcon and Nile crocodile, dating from the Old and Middle Kingdoms (Saleh and Sourouzian 1987: no. 66; Wildung 1987: fig. 6). These were thought to embody the respective divinities dwelling within the temples from which they came.

In the Eighteenth Dynasty, during the long and glorious reign of Amenhotep III, there was a proliferation of animal imagery in official commissions on a scale as never before, including colossal statuary of theriomorphic and therianthropic types (Simpson 1971; Romano 1979; Kozloff and Bryan 1992: 28, 215–28; El-Saghir 1996). This phenomenon paralleled the considerably expanded importance of animal cults at this time (Hornung 1967: 75; Brovarski 1984: 1003–4). For example, as a sign of devotion to Sekhmet, perhaps in an attempt to repel an outbreak of plague, Amenhotep III created a monumental "stone litany" to this powerful goddess by dedicating some 730 individual over-life-size gray granite statues of her, as a lioness-headed young woman, a pair of them for each day of the year, in the temple of Mut at Karnak (Yoyotte 1980; Page-Gasser and Wiese 1997: no. 77). While in Middle Egypt, at El-Ashmunein (ancient Hermopolis Magna), site of the god Thoth's main religious center, the king had erected as many as eight gigantic quartzite figures (each 4.5 m in height) of squatting hamadryas baboons, only

two of which are now extant (Houlihan 1996a: pl. XXX). The flourishing appeal of sacred animals in Egyptian popular religion during the Nineteenth and Twentieth Dynasties is evident from their appearance on private stelae and burial chamber decoration, where they are the subject of special invocation and veneration. All this foreshadows the iconographic prominence of sacred birds and beasts in the Late Dynastic and Ptolemaic periods, best exemplified by the menagerie of innumerable votive bronze statuettes and coffins that fill museums worldwide: cat, shrew, Egyptian mongoose, hamadryas baboon, desert hare, Horus falcon, scorpion, Nile crocodile, bull, lizard, frog, sacred ibis, snakes, beetles, various Nile fishes, and many others (Steindorff 1946; Roeder 1956; Kozloff 1981; Bothmer *et al.* 1987; Gautier *et al.* 1988; Schoske and Wildung 1993; Walker 1996; Page-Gasser and Wiese 1997). These zoomorphic objects range in quality from crude figurines to elegantly fashioned near life-size pieces.

From Predynastic times, Egyptian craftsmen made amulets in the shape of sacred animal and other faunal forms, in various materials, which were worn for magical protection by both the living and the departed (Andrews 1994). The most ubiquitous was the sacred scarab beetle, symbolic of new life and, by extension, the resurrection that was hoped for in the hereafter. Moreover, the undersides of these charms were routinely decorated with other creatures, which had additional meanings, such as fecundity or regeneration (Hornung and Staehelin 1976).

ANIMALS IN HUSBANDRY AND SERVICE

One of the foremost functions of the ancient Egyptian tomb was to provide a suitable environment for rebirth and maintenance in the hereafter. As a means of magically ensuring an endless supply of delicious victuals the deceased could draw upon throughout eternity, well-to-do private individuals from virtually every period of Egyptian history had the walls of their tomb chapels decorated with paintings or reliefs illustrating an assortment of country life themes, with a strong emphasis on depictions of the procurement and preparation of foodstuffs (Simpson 1976; Harpur 1987; Martin 1991). Within the decorative program, considerable space was routinely devoted to panoramic compositions of some of the various animal

husbandry and agricultural pursuits that took place during the passing seasons on the vast country estates of these wealthy landowners or those on royal domains. These ideal, but accurately observed, pastoral representations portray farmhands, herders, and aviculturalists, among many others, carrying out their occupations of earthly life for the benefit of the deceased tomb owner. Almost all scenes have identifying and descriptive text captions. Long processions of offering bearers bringing the fruits of the field and farm are also a standard element. As a result of this abundant documentation, we have been bequeathed an unrivaled window onto the Egyptian's utilization and care of their domestic and semi-domestic animals. This record is further supplemented by numerous painted wooden tomb models of daily life, mostly dating from the Middle Kingdom, although the subject matter of these is much less diverse (Breasted 1948; Winlock 1955; Gilbert 1988; Tooley 1995). It is impossible, owing to the restrictions of space, to present here an indepth review of the considerable range of different activities where captive birds and beasts are encountered in tomb paintings, reliefs, and models. The content of these reoccurring bucolic episodes have been masterly described and comprehensively analyzed in a fundamental study by Jacques Vandier, to which inquiring readers are directed (Vandier 1964; 1969; 1978). The aim of the following is to highlight briefly those creatures habitually encountered in scenes of the Egyptian farmyard.

Widely esteemed for their array of useful products (meat, milk, fat, blood, hide, bone, sinew, dung, and horn), domestic cattle were important economic commodities in ancient Egypt. Moreover, oxen were, as a matter of course, put to use as beasts of burden, being employed as draft animals for tillage, cartage and sledging and, during the harvest, were often utilized on the threshing floor (Ghoneim 1977: 101–240; Boessneck 1988: 66–72; Houlihan 1996a: 10–20). Cattle can be recognized among the earliest extant sculptural renderings from ancient Egypt (Boessneck 1953: fig. 2; Asselberghs 1961: fig. 30). From the Late Predynastic period onward, the potent image of the bull was also closely associated with the might and majesty of the living king (Saleh and Sourouzian 1987: no. 8; Berman and Letellier 1996: no. 1). There was scarcely a tomb chapel built during pharaonic civilization that did not have at least some domestic cattle figured in it, depicting them either laboring in the fields drawing a scratch plow, birthing, crossing canals, mating, or being milked

(fig. 16.3), branded, housed in fattening stables, or proudly being paraded before their owners for the annual inspection and count (Wreszinski 1936: pls. 37, 44–47, 50, 52–53, 59, 89, 92; Boessneck 1988: figs. 105–119; Houlihan 1996a: figs. 7–13 and pl. XXII). Several distinct breeds of cattle existed, and they are ubiquitous as prize offerings on tomb and temple walls, specially fattened and ready for sacrifice. Like other African cattle herding pastoralists, the ancient Egyptians also artificially deformed horns of special oxen, and this can be observed in their depictions (Schwabe 1984).

The Egyptian elite seem to have been extremely fond of beef, and wished to dine on fine meals of this costly fare for all time. A near standard element of tomb chapel decoration includes the ritual binding, slaughtering, and butchering of one or more head of choice cattle (Vandier 1969: 128–85; Gilbert 1988: 78–82; Ikram 1995: 41–54). These steer served a critical function in the celebration of the funerary cult repast. Domestic humped cattle, or zebu, make their first appearance in Egyptian iconography during the early Eighteenth Dynasty (Boessneck 1988: 70–71; Nicolotti and Guérin 1992). Although fragments of Minoan wall painting exhibiting bouts of "bull leaping" have recently been uncovered at Tell el-Dabʿa (ancient Avaris) in the eastern Nile Delta, this was not, as far as we know, an Egyptian activity (Bietak 1996: pls. III–VI). However, tomb scenes clearly indicate that they did occasionally enjoy watching bulls battle one another (Kanawati 1991; Galán 1994).

Teams of hard working donkeys are routinely met with in scenes of country life, being driven to and from harvest fields, a vital beast of burden performing various agricultural tasks (Boessneck 1988: 78–79; Houlihan 1996a: 29–33). Their legendary stubbornness was, of course, well-known in antiquity, and numerous vignettes capture fieldhands struggling with defiant beasts, as they attempt to get them to do some work (Wreszinski 1936: pls. 46, 47, 49, 50, 52, 53, 56, 57). One especially graphic detail of wall painting shows a poor donkey's rump bloodied from the punishing blows of its cruel driver (Houlihan 1996a: pl. XIII). Donkeys were also employed as pack animals in caravans. Egyptian citizens are never shown riding on the backside of donkeys, only foreigners were. Nevertheless, there are a few rare occasions during the Old Kingdom portraying tomb owners riding in a wooden palanquin borne on the back of a pair of stout donkeys (Moussa and Altenmüller 1977: pls. 42, 43; Houlihan 1996a: fig. 26).

Precisely when the horse first arrived on Egyptian soil must await further zooarchaeological research, but recent scholarship suggests it was already occasionally imported into the country beginning in the Thirteenth Dynasty (Braunstein-Silvestre 1984; Boessneck 1988: 79–81; Leclant and Clere 1995: 246 with n. 67; Bietak 1996: 31 with n. 56; Houlihan 1996a: 33–38). Its earliest appearance in the artistic record, as currently known, may come from the reign of Ahmose, founder of the Eighteenth Dynasty (Harvey 1994). Artisans rapidly took to this noble creature, fashioning some of the most stirring and realistic pictures of the entire animal genera (Cooney 1965: nos. 26–55; Rommelaere 1991). The horse predominantly occurs hitched to light two-wheeled chariots, for use in military, sporting, and ceremonial functions. The training and handling of fiery steeds was quickly absorbed into the royal athletic tradition (Der Manuelian 1987: 196–200; Decker 1992: 46–55). The practice of horseback riding seems to have been extremely limited in ancient Egypt (Schulman 1995: 291, 297–98). It was not until the Ptolemaic period that an Egyptian king, or any other notable for that matter, was ever depicted on the backside of a horse (Leclant 1980: fig. 68).

In all of ancient Egyptian art there are only a handful of illustrations that can reasonably be identified as being a hinny or a mule (Störk 1980a; Boessneck 1988: 81–83; Houlihan 1996a: 37–38).[2] This is likely because of the late introduction of the horse. The dromedary or one humped camel (*Camelus dromedarius*), contrary to what has been espoused frequently over the years, is confidently known only from the artistic record in Egypt beginning in the Greco-Roman period (Midant-Reynes and Braunstein-Silvestre 1980; Rowley-Conwy 1988; Houlihan 1996a: 38–39).[3] Then the beast principally occurs in the form of numerous terracotta figurines, most of which were manufactured between the first and third centuries C.E. (Nachtergael 1989).

Two other highly valued members of the Egyptians' circle of domestic animals were goats and sheep. Shepherded flocks of these

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[2] Some authorities continue to maintain that these are depictions of onagers (*Equus hemionus*) and, therefore, exotic creatures imported into New Kingdom Egypt from western Asia. For example, see Hansen (1997).

[3] Recently, for instance, a crudely scratched figure on a broken pottery dish dating from the late Eighteenth or early Nineteenth Dynasty, found at Qantir in the eastern Nile Delta, has been called the oldest safely attested representation of a dromedary known from ancient Egypt (Pusch 1996). However, like all the other proposed early illustrations of the beast, its fails to convince.

creatures can often be seen in tomb decoration, especially under the Old and Middle Kingdoms; they also appear amid the booty of livestock obtained from foreign sources (Boessneck 1988: 72–76; Houlihan 1996a: 22–25). A stock motif of tomb chapel decoration features a number of goats browsing in a tree, nibbling on the leaves and twigs, just as these beasts are wont to do in nature (W. S. Smith 1981: fig. 371; Boessneck 1988: figs. 124, 127; Houlihan 1996a: fig. 18). Sometimes a goatherd is depicted pulling down the branches with a long curved stick to help them feed. Goats can occasionally also be observed in compositions feeding from mangers and being fed forcibly by hand, fattened up prior to slaughter. More than one breed of sheep can be distinguished readily. The wool-sheep is first evidenced from a wall painting in the Twelfth Dynasty rock tomb of the nomarch Khnumhotep III (BH 3) at Beni Hasan. Long files of sheep are sometimes depicted being driven by farmers brandishing long whips of twisted rope to tread freshly sown grain seed into the muddy soil (Simpson 1976: pl. XIII; Houlihan 1996a: fig. 16).

The oldest known representation of a pig from ancient Egypt is attibuted to the Amratian period. This takes the form of a most curious ceramic statuette, said by some authorities to be the portrayal of a Predynastic "pig deity" (Fay 1990: no. 3). Although the domestic pig was probably always a standard item on the Egyptians' menu during life, at least among the lower rungs of society, they are rarely ever represented or even mentioned in the grand tomb chapels of the well-heeled. Pigs were almost certainly viewed as impure provisions to take into the netherworld (Boessneck 1988: 76–78; te Velde 1992; Houlihan 1996a: 25–29), but they do occasionally appear among the domestic livestock in a handful of tomb scenes during the first half of the Eighteenth Dynasty. They are even illustrated treading newly sown seed into the moist earth, just as Herodotus (II.14) claimed these beasts were used in Egypt (Helck 1996: 78–83). On the other hand, during the Third Intermediate period, statuettes and amulets of a sow nursing her litter were abundant as charms for enhancing fecundity among women (Fóti 1973; Andrews 1994: 35; Page-Gasser and Wiese 1997: no. 177).

Always accomplished animaliers, Egyptian artisans created legions of deftly executed bird images (fig. 3.2). Within the vast repertoire of scenes of everyday life on tomb chapel walls, there are numerous episodes illustrating the vibrant activities of busy poultry yards and

Fig. 3.2. Detail of wall painting from tomb of Horemhab at Thebes showing a small flock of captive dalmatian pelicans. Their eggs are depicted on the left, neatly arranged in a pottery vessel and covered with straw to protect them. 18th dynasty. Photo courtesy Patrick F. Houlihan.

aviaries (Vandier 1969: 398–446; Mahmoud 1991: 217–55). These are shown teeming with an assortment of choice eating ducks, geese, cranes, and doves, which are usually shown feeding, but are sometimes also being force-fed by attendants (Wreszinski 1936: pls. 76–83; Boessneck 1988: figs. 49, 168, 171, 176; Houlihan 1986: figs. 73–75, 101, 118). Flocks of table geese, ducks, and cranes routinely occur, being herded by men wielding long sticks. Generous numbers of waterfowl were also traditionally represented, being carried as offerings by bearers on tomb and temple walls of all eras. In many instances, though, it is difficult to identify these to the species level, since they were rather summarily executed and diagnostic features are not always present. The domestic farmyard goose is recognizable from wall paintings, at least by the middle of the Eighteenth Dynasty (Houlihan 1986: 54–56; Boessneck 1988: 88–90).

Another aspect of country life that is encountered on both royal and private monuments is apiculture (see also chapter 16). However, while the honeybee was a standard hieroglyph, and in addition had important symbolic associations for the Egyptians, scenes of bee keeping rarely occur in iconography (Kuény 1950; Leclant 1975; Neufeld 1978; Chouliara-Raïos 1989). This activity is first attested in a well-known relief during the Fifth Dynasty at the "Chamber of the Seasons" in solar temple of Niuserre at Abu Ghurab, but the origin of this occupation must undoubtedly reach much farther back into antiquity. Probably the most informative and best-preserved instance of bee keeping is to be found in the Twenty-sixth Dynasty Theban tomb chapel (TT 279) of Pabasa (Neufeld 1978: fig. 9; Boessneck 1988: fig. 250; Houlihan 1996a: fig. 130). Apiaries were generally comprised of cylindrical ceramic pots arranged horizontally, one row on top of another, seemingly not unlike those known from contemporary Egypt.

WILDLIFE PORTRAYED IN SCENES OF HUNTING AND FISHING

As mentioned above, the chase was already a major artistic motif in Predynastic Egypt, and an interest in this theme continued throughout pharaonic civilization, becoming part of the standard repertory of subjects on tomb chapel and temple wall decoration of all historical epochs, and is widely encountered in the minor arts as well (Vandier 1964; Altenmüller 1980; Decker 1992: 147–67; Decker and

Herb 1994). Scenes in private tombs customarily illustrate the owner actively participating in either desert hunting, fowling with boomerangs, or spearfishing from rafts in the vast papyrus swamplands. Beyond the measure of ritual significance that was undoubtedly attached to these works on some level, such sporting pastimes were likely to be earthly pleasures that were hoped to be enjoyed forever in the beyond (Touny and Wenig 1969: 61–67; Feucht 1992). It must be pointed out, however, that during the Old Kingdom, there is apparently only one known instance of the deceased chasing desert game himself, otherwise he merely observed his huntsmen at work, and had to be content with enjoying other modes of recreational hunting (Petrie 1892: pl. XVII). There are also thrilling episodes of hippopotamus hunting, as gangs of men in papyrus skiffs harpoon these dangerous beasts, which dramatically bay and bellow out in pain and furry at their attackers (Säve-Söderbergh 1953; Altenmüller 1989). This subject is nowhere better taken up than in the great swampland scene of the famed late Fifth Dynasty tomb chapel belonging to a notable named Ti (no. 60) at Saqqara (Wreszinski 1936: pl. 104; Decker and Herb 1994: pls. CXCIII–CXCIV; Houlihan 1996a: figs. 79, 94; 1996c). These animated hunting compositions can display a dazzling diversity of wildlife. They feature numerous species of waterbirds and insects roosting amid and winging above the lush greenery of flowering papyrus thickets, as small predatory mammals climb the stems searching for a meal. The waters of the Nile are thick with fishes and crocodiles, and throngs of various creatures scurry about or burrow along the undulating semi-desert landscape (Houlihan 1986; 1996a). The encyclopedic natural history scenes of the "Chamber of the Seasons" in the Fifth Dynasty solar temple of Neuserre at Abu Ghurab, though fragmentary, are exceptional not only because of the impressive range of wild and domestic fauna, and the scope of outdoor activities represented, but because this set of painted reliefs reveal much information about the Egyptians' awareness and understanding of the annual cycles of the animal world (W. S. Smith 1965: 141–47; Edel and Wenig 1974). This collection of scenes has been described aptly by Elmar Edel as a kind of visual hymn to the beneficence of the sun god.

Egyptian artisans clearly delighted in the wealth of possibilities in portraying wildlife: the tangled confusion of forms in panic stricken birds and beasts (fig. 3.3), leaping hounds attacking bounding game, desert hares springing forward, stealthy common genets creeping up

Fig. 3.3. A dying red fox seeks refuge behind a bush. Wall painting from tomb chapel of Userhet at Thebes. 18th dynasty. Photo courtesy Patrick F. Houlihan.

on terrified fledglings, butterflies on the wing, menacing crocodiles attacking vulnerable baby hippos, pied kingfishers hurtling downward to catch a meal, wounded striped hyenas struggling desperately to dislodge an arrow from their mouths, lions dispatching their quarry, and game animals fighting, copulating, and giving birth. In their finest work, these gifted artisans carefully recorded the distinguishing morphological and color characteristics of individual species. Errors in details, though, do occur, and are more evident than is generally recognized. While capable of achieving subtle shading and almost exact hues of plumages and coats, these artisans sometimes opted for a vibrancy in their painting of bird and animal life that was more appealing than it was natural. The emphasis was surely not on modern zoological precision, but on conveying the essence of their subjects.

The aim of the desert chase was not always to bag game, but hunters also sought by various means to capture animals alive for future consumption and sacrifice. A procession of these creatures is then shown being led towards the deceased tomb owner (Vandier

Fig. 3.4. A painted relief depicting a retainer bringing an offering of a bubal hartebeest (left) and an addax, which are led on leashes to enrich the menu of the deceased. From the tomb chapel of the mastaba of two senior officials at Saqqara. 5th dynasty. Photo courtesy Patrick F. Houlihan.

1969: 46–54; Moussa and Altenmüller 1977: 117–20 and pls. 44–48). These became the semi-domesticated beasts we view in tomb chapel scenes housed in paddocks on the vast estates of the aristocracy: striped hyena, Nubian ibex, scimitar-horned oryx, addax, bubal hartebeest (fig. 3.4), and dorcas gazelle. They are often collared and tethered to the ground, and sometimes are being force-fed or allowed to eat from well-stocked mangers (Wreszinski 1936: pls. 37, 87; Boessneck 1988: figs. 39, 46, 51, 55; Houlihan 1996a: figs. 40, 43 and pl. XI). Some of these same animals are also routinely mentioned in the extensive food offering menus included in tomb chapels, and on at least one occasion, in the early Fifth Dynasty mastaba of Seshathotep (G 5150) at Giza, hyena meat was listed in the funerary repast as well (Junker 1934: fig. 33; Boessneck 1953: fig. 5; 1988: fig. 50).

Egyptian kings participated in the chase not only for pleasure, but as a means of demonstrating their valor and strength. Their dispatching of quarry also symbolized the destroying of chaotic forces that might harm the country (Hornung 1967: 79–82). This is perhaps best exemplified by a marvelous painted wooden box discovered in the Eighteenth Dynasty tomb of Tutankhamun (VK 62). On one side the boy-king is shown in his chariot utterly routing a pride of lions

while, on the other side, in super human fashion, he slays a field of desert game with unerring arrows (Davies and Gardiner 1962: pls. III–IV; Decker and Herb 1994: pls. CLXXXIV–CLXXVII). The most unusual hunting vignette preserved on a private monument from pharaonic Egypt is to be found in Eighteenth Dynasty Theban tomb chapel of Amenemhab (TT 85). Here the deceased valiantly does one-on-one mortal combat with a giant, menacing-looking female striped hyena on a strange (foreign?) landscape, armed only with a short stick and spear (W. S. Smith 1981: fig. 253; Decker and Herb 1994: pl. CLXV).

By the middle of the First Dynasty, as evidenced from a representation on a gaming disc found in the tomb of the chancellor Hemaka (S 3035) at Saqqara, clever fowlers had perfected the technique of employing large, hexagonal-shaped clap-nets to capture seasonally vast numbers of migratory ducks, geese, and cranes at one fell swoop (Wreszinski 1936: pls. 73–75, 80, 81; Houlihan 1986: figs. 16, 94, 95, 121; Houlihan 1996a: figs. 97, 109). This method of trapping became a recurring motif in the decorative program of tombs, and is also attested in religious imagery (Vandier 1969: 320–38; Decker and Herb 1994: 456–532). A wall painting in the Twelfth Dynasty rock tomb of the nomarch Khnumhotep III (BH 3) at Beni Hasan depicts the owner clap-netting from behind the cover of a blind. Flanking the pond are a pair small flowering Nile acacia trees (*Acacia nilotica*), on whose branches are roosting a bevy of nine passerines, some of the most extraordinary and delightful birds in all of ancient art (Griffith 1900a: frontispiece and pls. VI–VII; Houlihan 1986; Boessneck 1988: fig. 181a–b; Shedid 1994: figs. 14, 108–11).

Fishing was another very important economic activity in ancient Egypt. Scenes illustrating groups of men engaged in various aspects of this country life occupation are prolific during all periods of history (Darby, Ghalioungui and Grivetti 1977: 337–404; Brewer and Friedman 1989; Sahrhage 1998). An especially lively episode observed in tomb decoration on many occasions particularly during the Old and Middle Kingdoms features a gang of fisherman struggling to haul ashore a huge seining net packed with an array of choice table species (Wreszinski 1936: pls. 40, 92, 95–98). Such fish are often so precisely executed that they can be identified readily with varieties still to be found in Nile waters nowadays (fig. 3.5). Nevertheless, fish seldom appear as offerings to the dead or to the gods, and

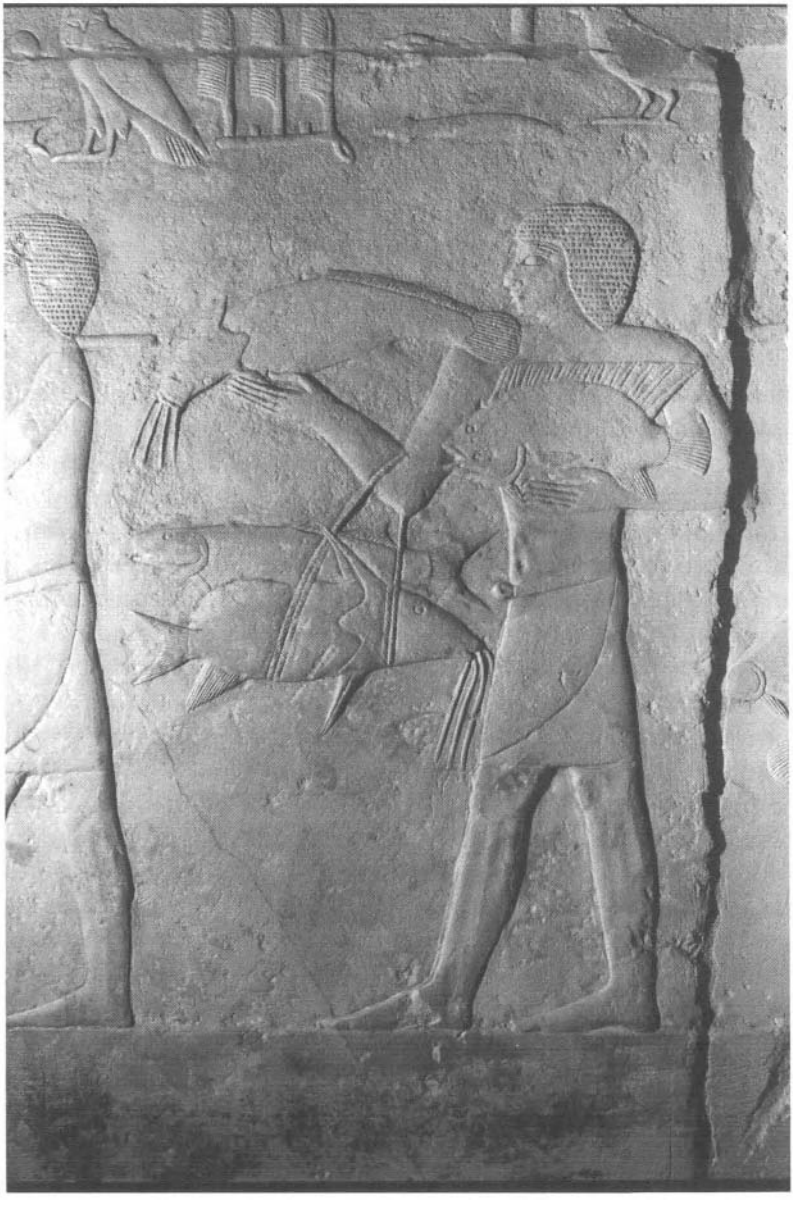

Fig. 3.5. Relief of an offering bearer bringing a supply of freshly caught Nile fish. These include a mullet, two kinds of catfish, and a massive tilapia. From the tomb chapel of the mastaba of the vizier Kagemni at Saqqara. 6th dynasty. Photo courtesy Patrick F. Houlihan.

some dietary restrictions against eating them were in place (Gamer-Wallert 1970: 66 and 135; Handoussa 1988). Images of fish were also widely used in the design of many utilitarian, amuletic, and decorative objects (Hornung and Staehelin 1976: 110–11; Fischer 1977: 162–63; Andrews 1994).

HOUSEHOLD COMPANIONS

The ancient Egyptians were tremendous pet fanciers. Beloved household creatures were regularly included in the decoration of tomb chapels, close to the side of their owners, from the early Old Kingdom onward. Through the power that lies dormant in picture and word, people fervently hoped that they would be able to continue to enjoy the companionship and warmth of these cherished animals throughout eternity. Egyptian art contains a rich pictorial record of the Egyptians' varied pet keeping practices. The sympathetic rendition of pets amply testifies to the close bond that existed between several animal species and humans millennia ago (Brunner-Traut 1980; Boessneck 1988: 57–60, 83–88; Houlihan 1996a: 75–112).

As much the faithful companion in antiquity as today, the dog was always regarded by the ancient Egyptians as the pet *par excellence*, the subject of special attention and heartfelt affection. There are innumerable images of this household animal in Egyptian iconography (Fischer 1980; Handoussa 1986; Hendrickx 1992: 14–20). They are featured in the company of the monarch, aristocrat, and humble laborer alike, as both pet and worker. The oldest securely dated appearance of the domestic dog from Egypt occurs on a widely known ceramic bowl from the Amratian period. The white-on-red painted design illustrates a bowman with four dogs on leashes under his charge, which, from their characteristic build, are clearly a type of greyhound (Houtart 1934: fig. 1; W. S. Smith 1981: fig. 2; Boessneck 1988: fig. 3). This sleek and sinewy hunting hound, possessing pointed ears and a short curled tail, becomes the most commonly portrayed form of dog throughout the entire Old Kingdom. Beginning in the Middle Kingdom, more diverse breeds of dogs become recognizable in paintings and reliefs than ever before (Griffith 1900a: pls. II–IV; Shedid 1994: figs. 82, 96–100). With the coming of the Eighteenth Dynasty, the renowned saluki makes its appearance in Egyptian art, and is regularly represented at the side of royalty and

well-to-do citizens (Boessneck 1988: fig. 140; Houlihan 1996a: pl. XXXII). Foreign dogs, too, were highly prized in ancient Egypt, and were imported from Libya, Nubia, Punt, and possibly western Asia. The most famous occurrence of this being, of course, the five named Libyan dogs pictured on the Eleventh Dynasty royal funerary stela from the Theban tomb chapel of Wahankh Intef II (see fig. 3.6).

From its earliest appearances in the country, the domestic dog was primarily utilized for the hunt. It is in this capacity that the dog is ubiquitously encountered in scenes on tomb chapel walls and elsewhere, running down and dispatching desert game for their owners. Dogs are routinely pictured in compositions as favored pets, wearing collars and sitting, ever alert, under their owners' chairs. These dogs are sometimes named in hieroglyphic captions, speaking to their high status, for example: "Brave One," "Lively One," "Exultation," "The Tail is as a Lion's," "Good Watcher," "He is a Shepherd," and "Reliable One" (Parkinson 1991: 112–14; see also chapter 16). Otherwise, animals in pharaonic Egypt were rarely given names. It seems rather curious that people are almost never rendered in Egyptian art playing with their pet dogs. Only two instances of this are presently known: a pair of charming Twelfth Dynasty faience statuettes each depict young boys squatting on the ground, playing with small dogs, which are about to dash towards them (Hayes 1990: 223; Page-Gasser and Wiese 1997: no. 54). Dating from the Late Dynastic and Ptolemaic periods, comes a group of notable near life-size stone statuettes of pet dogs (Ranke 1936: pl. 175; 1950: fig. 24; Vandier 1973: pl. XXVI).

Second in popularity only to the dog, pet monkeys and baboons were favorites among the affluent classes in ancient Egypt (Vandier d'Abbadie 1964; 1965; 1966). Their likenesses are known from a multitude of secular images, including tomb scenes and figured ostraca, and in a whole range of the minor arts (figs. 3.7, 3.8; Brunner-Traut 1975; Hornung and Staehelin 1976: 106–8; Houlihan 1997). It is widely thought that these creatures possessed a certain measure of erotic significance for the Egyptians (Derchain 1976: 8–9; Manniche 1987: 43–44, 46). These highly intelligent primates are perhaps most renowned for the touch of unmistakable humor they introduce into Egyptian iconography (see below).

There are good reasons for thinking that the original home of the domestic cat is likely to have been Egypt, even if conclusive evidence is still wanting (Baldwin 1975: 429–31; Ginsburg 1988/89; 1991;

Fig. 3.6. Carved relief from the funerary stela of Wahankh Intef II, picturing three of his foreign dogs. Their names are provided in hieroglyphs beside them. 11th dynasty. Photo courtesy Patrick F. Houlihan.

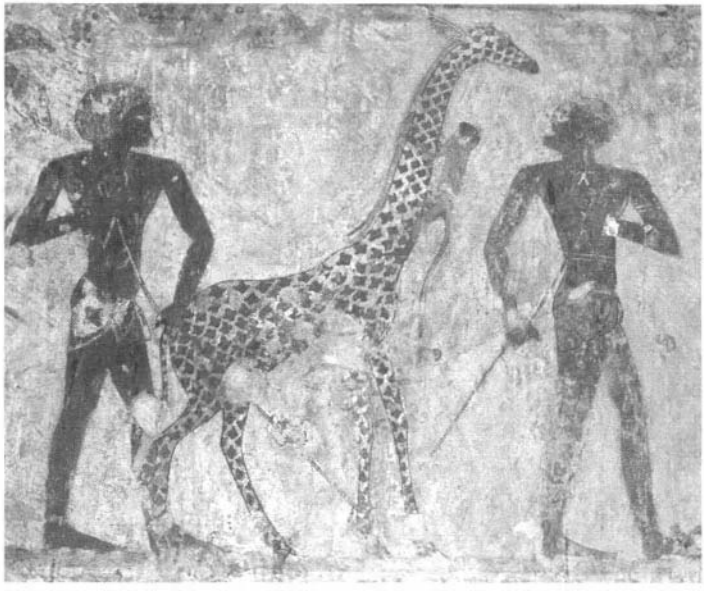

Fig. 3.7. Wall painting from the tomb chapel of Rekhmire at Thebes showing the arrival of foreign tribute, including live animals such as this giraffe, which is being led by two Nubians using ropes tied to its forelegs to restrain it. Note the green monkey that climbs the giraffe's long neck. 18th dynasty. Photo courtesy Patrick F. Houlihan.

Fig. 3.8. A man holds two baboons on leashes in a market scene. One of the baboons has apprehended a boy about to steal something from a basket. Note the baby baboon holding on to its mother. From the tomb chapel of the mastaba of Tepemankh at Saqqara. 5th dynasty. Photo courtesy Patrick F. Houlihan.

Clutton-Brock 1993: 63; Brewer, Redford and Redford 1994: 108–9). Nor has the precise date of its complete domestication yet to be determined. The inscrutable cat is only recognizable in tomb scenes of everyday life from the Eleventh Dynasty onward (Boessneck 1988: 85; Malek 1993: 49–50; Houlihan 1996a: 83). One consequence of the extraordinary world-wide popularity of the cat in the present age has been the considerable attention given to the place of this species in ancient Egypt. It has been the focus of several monographs and a myriad of scholarly and popular articles (for example Hermann 1937; de Morant 1937; Langton 1940; Riefstahl 1952; Scott 1958; Abou-Ghazi 1963; Baldwin 1975; Remeczki 1975; Störk 1980b; te Velde 1982; Yoyotte 1988; Cahen *et al.* 1989; Delvaux and Warmenbol 1991; Kessler 1993; Malek 1993; Estep 1992/93; Filer 1995; Trumble and Kubinyi 1996; Schorsch and Frantz 1997/98). This makes the common cat a well-studied, if not the most frequently studied, creature appearing in Egyptian iconography. Some of these works, however, have certainly overemphasized the warm and cuddly aspect of the human and feline relationship in antiquity, giving scant attention to the fate of the tens of millions of cats raised and sacrificed as votive offerings, particularly during the Late Dynastic and Ptolemaic periods.

It is from wall paintings and reliefs in the tomb chapels belonging to Theban notables of the Eighteenth and Nineteenth Dynasties that we meet the cat in its most touching domestic context, a beloved family pet, sometimes bejeweled, often sitting under the mistress' chair (Mekhitarian 1991; Malek 1993: 53–69). In contrast to pet dogs, there is only one household cat known to have received a personal name. In the Eighteenth Dynasty tomb chapel of Puimre (TT 39) at Thebes, we meet a cat called the "Pleasant One" (Malek 1993: 51; Houlihan 1996a: 85). It is believed by some writers that the cat, like the monkey, had erotic overtones for the pharaonic Egyptians, and may have even been considered a symbol of female sexuality (te Velde 1982: 136; Robins 1990: 53; Warmenbol and Doyen 1991: 57–59). The image of a tabby is known from a host of minor works of art, such as jewelry and various cosmetic implements (Hornung and Staehelin 1976: 119–21; Malek 1993). The cat is also an extremely prominent character on figured ostraca (see below).

Other felines were occasionally kept as "house cats" too. During the Old Kingdom, there is one instance of a pet leopard portrayed

in a tomb chapel walking on a leash with its dwarf minder (Vandier d'Abbadie 1964: fig. 18; Boessneck 1988: fig. 94). Another lively vignette pictures a leopard and a lion being transported in strong wooden cages (Decker and Herb 1994: pl. CXXXVII; Houlihan 1996a: fig. 66). In the Eighteenth Dynasty, Queen Hatshepsut could not have failed to impress all in attendance when she arrived in the royal carrying-chair with her pair of magnificent pet cheetahs in tow (Naville 1906: pl. CXXV; Aldred 1972: pl. 18). From the Late Predynastic period through the Old Kingdom, the lion was one of the most conspicuous of all symbols of kingship (Romano 1996: 66). The strong visual link between the two is quintessentially manifested through sphinxes, generally human-headed lions; the Fourth Dynasty colossal "Great Sphinx" at Giza being, of course, the foremost example. This may have prompted the practice of keeping lions as palace pets, always a royal prerogative, that can be traced from the beginning of the First Dynasty through the New Kingdom and beyond (de Wit 1951; van Essche 1991a; Houlihan 1996a: 90–94). In the Nineteenth Dynasty, Ramesses II delighted in his tame lions; one of his favorites was called "Slayer of his Enemies."

The ancient Egyptians were enamored with the graceful and dewy-eyed gazelle, and, from time to time, maintained them as pets in their homes. The practice of keeping these tame animals is known from more recent times in the country as well. Such luminaries in the history of Egyptology as Giovanni Belzoni, Auguste Mariette, and Howard Carter, for example, all kept pet gazelles during their days in Egypt. The first instance observed in Egyptian art comes from the Eighteenth Dynasty, when two of Akhenaten and Nefertiti's young daughters are depicted in a relief composition holding their small gazelles (Troy 1986: 130; Aldred 1988: 279). An elegant tinted ivory statuette of a gazelle, dating from around the same time, is probably also to be linked to pet-keeping, perhaps a touching remembrance of a dear creature (Arnold 1995: no. 3; Houlihan 1996a: fig. 75). At least two Theban notables of the Twenty-sixth Dynasty felt so strongly about their pet gazelles that they had them pictured with them in their grandiose tomb chapels (TT 36 and TT 279), standing directly beneath their chairs (Leclant 1980: fig. 61; W. S. Smith 1981: fig. 393; Kuhlmann and Schenkel 1983: pls. 14, 85).

Children of the Old Kingdom had a predilection for keeping birds as pets or playthings; at least, this is how they routinely appear in tomb scenes, clutching one of these creatures by their wings (fig. 3.9).

Fig. 3.9. Relief of a young boy holding a hoopoe, from the mastaba of Ptahhotep II, Saqqara. 5th dynasty. Photo courtesy Patrick F. Houlihan.

The perky and colorful hoopoe was far and away the top choice of the day, although the lapwing, and turtle dove appear as well (Houlihan 1986; 1996a: fig. 76). By the early Eighteenth Dynasty, the Egyptian goose, in fact a large duck, had risen in distinction, becoming sacred to Amun, the great national god of the city of Thebes. It was surely for this reason that this species was kept as a tame pet by some Theban notables, and is displayed quietly sitting near them in their decorated tomb chapels and even accompanying them on

family fowling expeditions to the swamplands, despite the bird's infamous aggressive behavior (Störk 1982: 484; Houlihan 1986: 62–65). It was again favored as a pet during the Twenty-sixth Dynasty. During the New Kingdom, portraying ducks in relationships with humans, where they otherwise seem to have been household pets, could have been an iconographic device for expressing erotic symbolism (Derchain 1976: 8–9; Robins 1990: 51; Schlichting 1994).

HUMOROUS ANIMAL IMAGES

Much of our knowledge about the daily lives of ancient Egyptians is derived from the study of formal funerary sources, especially tomb chapel decoration. These official artistic undertakings seem to display within them comparatively little that is humorous or, at any rate, that appears immediately recognizable as such to the modern eye. Be that as it may, touches of unambiguous visual levity do occur in some of these compositions. Taken together with other representational evidence, coupled with textual materials, we are provided with an intriguing slice of the ancient Egyptians' sense of humor (Wilber 1960; van de Walle 1969; Silverman 1982: 277–79; Meltzer 1992; see now Houlihan 2001 for an extensive discussion). In Old Kingdom tomb chapel scenes, monkeys in particular can be seen engaging in a wide variety of lighthearted antics and mischievous shenanigans, as well as imitating human behaviors, which surely must have been as delightful and amusing in antiquity as they strike us nowadays. This reoccurring motif is probably the earliest, and certainly amongst the most conspicuous, instance of humor Egyptian iconography (Fischer 1993: 1; Houlihan 1997: 42). Beginning early in the Fourth Dynasty, these highly intelligent primates can occasionally be observed, for example, helping with the twisting of the must sack during the making of wine, directing boat building while brandishing a foreman's baton, carrying a heavy load using a shoulder yoke, piloting the steer oar of a Nile vessel, assisting with the rigging of a boat under full sail, policing the marketplace, riding on the back of a dog, gaily dancing, "aping" the gestures of a singer, and riding along perched on top of the head or shoulder of their dwarf guardians (Fischer 1959: 251–54; Sourdive 1984: 19–24; Dasen 1993: 114–18; Houlihan 1997: 31–37). For the ancient Egyptians, animal images developed into a convenient vehicle for expressing

some comic relief within the constraints of established decorum and the strict conventions of artistic representation.

Another clear-cut instance of such humor is to be found on a royal monument from the Eighteenth Dynasty. Among the painted reliefs in the mortuary temple of Queen Hatshepsut at Deir el-Bahari, there is a portrait of the mountainously obese Queen of Punt, Ati, which is rather comical in and of itself. However, the Puntite queen is then followed by a little saddled donkey, with a short inscription above it, identifying the poor creature as her trusty mount (W. S. Smith 1965: fig. 173; Saleh and Sourouzian 1987: no. 130). This may have struck the ancient Egyptians as doubly funny, since they themselves apparently did not ride donkeys. Also from the Eighteenth Dynasty comes a class of objects that some authorities have called children's playthings, the actual function of which remains imperfectly understood, and which features further examples of monkey business. Here a simian can be seen driving a chariot, and numerous statuettes fashioned from limestone depict monkey musicians, acrobats, and others engaged in wrestling matches (Fischer 1959: 252 with n. 52; Samson 1972: 37–40; Silverman 1982: 280). Whatever the precise significance of these may have been, none can gainsay the vein of humor in these pieces. This also extends to other minor works of art, such as an unusual faience figurine, said to be of late New Kingdom date, portraying a Nubian woman breast-feeding a monkey as if it were her baby (Aldred 1971: pl. 147).

If humorous themes appear uncommon in officially commissioned works of art, they are much more apparent in casual artistic endeavors. From the time of the Nineteenth and Twentieth Dynasties come many hundreds of free-style black and red ink drawings executed on ostraca (pottery shards and limestone flakes); these are joined by others on three fragmentary painted "satirical" papyri, featuring playful motifs of animal caricatures cast in quasi-human situations, revolving around a topsy-turvy world. Most of these were produced by the gang of royal artisans living in the village at Deir el-Medina, situated at the southern end of the Theban necropolis (fig. 3.10). A sizable variety of wild and domestic creatures is recognizable in the faunal repertoire of this immensely appealing collection, even if there was not too much concern for zoological correctness (Brunner-Traut 1956; 1979; Peterson 1973; Peck and Ross 1978). An especially large number of the sketches on figured ostraca and papyri are devoted to cat and mouse reversals, which might have been called something

Fig. 3.10. Ostracon with red and black ink drawing, showing an Egyptian tabby wielding a long staff and herding a flock of six ducks or geese. Above the birds, there is a nest filled with a clutch of eggs. The cat is equipped with a small bag of provisions suspended from the end of a long crook that it carries over its shoulder. Deir el-Medina. 19th or 20th dynasty. Photo courtesy Patrick F. Houlihan.

like "The War of the Cats and Mice." Numerous others feature ensembles of animal musicians, beasts shepherding flocks of their typical prey, and some that appear to be parodying priests, carrying out certain religious and funerary rites (Brunner-Traut 1979: 11–18; 1984; del Francia 1985; van Essche 1991b; Houlihan 1996a: 209–17). They run the gamut of curious and unique vignettes. These unconventional drawings have enormous vitality, and display a freedom of hand and spirit that is seldom seen elsewhere. One small ostracon from Deir el-Medina pictures a weeping child reduced to eating from the same dish as does a filthy village pig (Vandier d'Abbadie 1940/41: pl. XLIV). Another exhibits a large black crow and a hippopotamus standing on either end of a weighing scale, reminiscent of the one known from the final judgment in the netherworld illustrated in the *Book of the Dead* (Houlihan 1986: fig. 191; 1991: figs. 1–2). Yet another ostracon delineates a religious ceremony of a mouse

god (or is it cat?) being carried in a procession by four pious jackal priests, as two more of them recite the liturgy and burn incense (Brunner-Traut 1984: fig. 14; Donadoni Roveri 1988: fig. 195). Some figured ostraca were clearly produced for the artisans' own personal amusement and pleasure. These rapidly created images may even have been passed around to fellow workers on the job site during idle moments, perhaps to share a good chuckle, then simply tossed away.

While no one can possibly deny their amusing aspects, the exact meaning behind these drawings taken together remains obscure for the present, owing to the absence of detailed explanatory texts accompanying them (Bianchi *et al.* 1988: no. 135; Fazzini *et al.* 1989: no. 62). It has been suggested, for instance, that they may have served as trenchant wit or social satire directed against the aristocracy and the decoration of their tomb chapels, and may reflect the turmoil that Egyptian society was experiencing at the close of the Twentieth Dynasty. Another possibility is that these motifs could be episodes taken from folktales or fables, unfortunately now lost, which centered around the humorous activities of these animal actors. Whichever interpretation is ultimately the correct one, what is certain is that some of these renderings also had a degree of religious association attached to them. It has been shown convincingly that a few of them are connected with established myths, such as *The Myth of the Eye of the Sun* (Lichtheim 1980: 156–59), indicating that they have another layer of meaning beyond the obvious comic appeal. Furthermore, some religious meaning must also account for the creation of a closely related and unique composition carved on a block of Twenty-fifth Dynasty temple wall relief from Nag el-Madamud, now in the Egyptian Museum, Cairo. This shows a banqueting scene, featuring animals engaged in human roles (Brunner-Traut 1979: fig. 5; Houlihan 1996a: fig. 153). That a purely satirical or humorous work would be included in the decoration of a sacred temple seems highly improbable.

EXOTIC BIRDS AND BEASTS

Like so many different peoples through the ages, the ancient Egyptians also seem to have been fascinated by, and derived pleasure from, viewing strange foreign animals, an interest that continues unabat-

ed in numerous modern cultures. Exotic birds and beasts from distant lands were avidly imported into the country as marvels to stir wonder and excitement among the royalty and members of the privileged classes, who took delight in their peculiar characteristics and behaviors. It seems probable that many of these individuals were housed in special menageries for display. Pictorial evidence indicates, and this has been corroborated by zooarchaeological findings, that others were used as game to stock hunting parks for sport (Boessneck 1981: 25–28; Boessneck and von den Driesch 1982: 136–38; Pusch 1991: 205). Some of these extraordinary animals entered Egypt as highly appreciated political gifts or tribute from rulers of other lands. Fellow potentates in other ancient Near Eastern kingdoms were likewise known occasionally to keep an assortment of animals from far-flung lands for show and hunting purposes (Elat 1978: 21–23). Receiving and possessing rare creatures was always a matter of considerable royal prestige. There was also an extremely important underlying motivation for keeping such zoological treasures above and beyond the general fascination with wildlife: in this array of captive exotic animals, Egyptian kings symbolically displayed their personal, political, and militaristic mastery over remote foreign countries through the domination of their endemic faunas. They were living proof of a monarch's might and influence (Hornung 1967: 79; Pitsch 1986: 1421–22; Houlihan 1996a: 197–98). As Egypt's power and influence spread, particularly during the imperialistic height of its vast empire under the Eighteenth Dynasty, so did the procession of animals entering the Nile Valley from farther and farther away. This admiration of birds and beasts from the distant unknown was also duly celebrated in artistic works, and developed into a reoccurring theme in Egyptian iconography. Indeed, recording the arrival and inspection of these curiosities was accorded considerable space within the decorative program of royal monuments and in the grand tomb chapels of the core aristocracy of Egyptian society (Boessneck 1988: 52–56; Houlihan 1996a: 195–208). Several of these compositions, for example, rank among the best-known and greatest masterpieces of Theban tomb painting.

The Egyptians' penchant for acquiring prestigious exotic creatures probably reaches back even before the rise of the pharonic state, when monkeys and other nonnative species entered the country from the tropical African hinterlands and elsewhere (Letellier and Ziegler 1977: 83). Notwithstanding this, the earliest firm occurrence of

importing a rare foreign beast, preserved in art, comes from the Fifth Dynasty mortuary temple of Sahure at Abusir. The decoration of this edifice included a remarkable scene featuring what is likely to have been the safe return home of an Egyptian trading expedition, sent under royal patronage to visit far-off Byblos on the Phoenician coast. Part of the Egyptians' haul consisted of several delightful live Syrian bears, portrayed in painted low relief, and all are shown wearing collars and tethered to the ground. Sahure must have been exceedingly proud of these creatures, so much so that he had his artisans commemorate their appearance on Egyptian soil (W. S. Smith 1965: figs. 7–8; Priese 1991: no. 24; Houlihan 1996a: fig. 133). Other unusual fauna are also occasionally pictured in desert hunting and related scenes during the Old and Middle Kingdoms. These include the giraffe, roan, and elephant or rhinoceros, animals that surely had long since completely disappeared from their former distributions in Egypt (Keimer 1943: figs. 1–2; W. S. Smith 1955: no. 23; Edel and Wenig 1974: pls. 1, 36, 38; Debono 1979: 422–23; Fischer 1987: pl. II, fig. 7; Shedid 1994: figs. 12, 31, 32, 64, 95). Perhaps a few of these beasts were expressly imported into the country to heighten the thrill of the chase. On the other hand, not all of these vignettes are likely to be records of reality, but are more probably expressions of an ideal, especially since, in a few instances, this exotic game is joined in the desert landscape by a cortège of fabulous monsters: the serpo-necked feline, the griffin, and the unidentifiable animal of the god Seth. Therefore, extreme caution should be exercised when attempting to determine the origin of these beasts; they could be no more than the product of wishful thinking.

With the coming of the New Kingdom there was a renewed and much expanded interest in the exotic, and this found its greatest expression in the depiction of foreign fauna and flora. The Egyptians' interest in trade with the African land of Punt is first attested in the Old Kingdom, but is best-known during the Eighteenth Dynasty, made famous from the great sea-borne expedition sent there by Queen Hatshepsut, and immortalized in a series of spectacular painted reliefs on the walls of the southern half of the middle colonnade of her mortuary temple at Deir el-Bahari (Naville 1898: pls. LXIX–LXXX; W. S. Smith 1965: figs. 173, 174). The precise location of Punt has yet to be firmly established on the ground, but is now thought with a high degree of probability to have occupied a considerable area of the eastern Sudan, extending to the Red Sea,

and into northwestern Ethiopia (Cozzolino 1993; Kitchen 1993). It was a lush, tropical setting and Hatshepsut's skillful artisans took painstaking care in capturing the region's exotic charm and character. This is especially evident with regard to the local plant and animal life, which have been reproduced practically scientifically, but, unfortunately, much of the pigment on them has not survived. The indigenous wildlife of Punt included giraffe, rhinoceros, baboon, cattle, donkey, birds, and others. Of particular noteworthiness is a whole range of wonderfully observed fishes and other marine creatures of the Red Sea and Indian Ocean, which the Egyptians encountered during the course of the long voyage (Danelius and Steinitz 1967; Gamer-Wallert 1970: 55–59 and pl. VII; Sahrhage 1998: 77–82). Among the wealth of costly commodities from Punt, shown being triumphantly transported back to Egypt, are thirty-one Myrrh trees (*Commiphora myrrha*) that were to be transplanted, as well as an amassed collection of live creatures and animal products: cattle, baboon, monkey, leopard, cheetah, domestic dog, giraffe, a long-legged bird (very possibly an ostrich), leopard and/or cheetah pelts, elephant tusks, giraffe tails, and ostrich eggs and plumes.

Determined not to be outdone by his aunt and immediate predecessor, Tuthmosis III likewise exhibited a bent for accumulating natural history exotica. In two chambers set to the rear of his festival temple at Karnak, and conveniently referred to nowadays as the "Botanical Garden," this warrior-king had recorded, in delicate, low relief, some of the plants and animals he encountered while on a military campaign into western Asia during the twenty-fifth year of this reign (Wreszinski 1935: pls. 26–33; Beaux 1990). This strange collection of fauna and flora was presented as a tribute by Tuthmosis III to the powerful chief god of Thebes, Amun, whose cult was the major beneficiary of the monarch's militaristic exploits. While most of the plants adorning these walls may appear to be genuine botanical specimens, shown complete with their root systems, the general consensus over many decades has been, sadly, that almost all of them are purely the product of the artisan's imagination, who apparently sought merely to indicate something as alien as possible (Houlihan 1986: 7 with n. 43; Fischer 1987: 26 with n. 126). This view is not universally held, however, and in recent years several Egyptologists specializing in natural history studies have argued that the "Botanical Garden" does, in fact, actually contain numerous foreign botanical species, even referring to it as the world's oldest

herbal (Beaux 1990; Baum 1992; Schoske, Kreißl and Germer 1992: fig. 73; Germer 1993, 77–78; Wilkinson 1998: 137–39). These proposed new identifications, though, seem rather speculative. In any event, even in the absence of preserved paint, some of the avifauna that are also portrayed here can be confidently determined, and a few of them are unique in Egyptian iconography: the darter, diver, and great spotted cuckoo (Houlihan 1986). A small gazelle illustrated here was tentatively labeled by the late Joachim Boessneck as a Persian Gazelle, which, if correct, would certainly make it a true import (Boessneck 1988: fig. 79). Also prominently exhibited in the "Botanical Garden" as beasts of wonderment are several head of cattle of the two-tailed and three-horned variety! These peculiarities may be simply flights of creativity or, perhaps, could even depict farmyard freaks, the kind well-known to working large-animal veterinarians.

During the Nineteenth Dynasty, Ramesses II likewise evinced an inquisitiveness into exotic wildlife. His modest rock-cut temple at Beit el-Wali includes a scene of the importation into Egypt of various domestic and wild animals, the spoils of Nubian war and tribute, which are shown paraded before the victorious king. These comprise cattle, lion, giraffe, monkey, gerenuk, beisa oryx, ostrich, cheetah, leopard, and an entire range of valuable animal products (Ricke, Hughes and Wente 1967: pls. 7–9). Although usually said to date from the Eighteenth Dynasty, it was, in all likelihood, this same monarch who, during the course of his reign, had represented in sunken relief on a pylon of the temple of the war god Montu at Armant, amid a frieze of Nubian booty, the delivery of an adult live rhinoceros to Egypt (Säve-Söderbergh 1956: 121; Fischer 1987: 26). The mighty rhinoceros is depicted being restrained by a gang of men using strong ropes. It appears to have been the subject of vigorous examination, because carved all around it are short hieroglyphic captions, briefly detailing its massive dimensions, including the length of the horn (Mond and Myers 1940, 2: pl. XCIII; Fischer 1987: pl. VI, fig. 20; Houlihan 1996a: fig. 143). The inclusion of these measurements makes this figure unique in Egyptian iconography. The arrival of this beast from the south must have been hailed as a truly heroic feat, and, by all means, worthy of public exhibition.

The painted wall decoration of Theban tomb chapels provides the most vivid evocation of the vast array of exotic fauna that flowed into Egypt during the New Kingdom. The private tombs of some of the highest ranking officials in the land, such as those of Rekh-

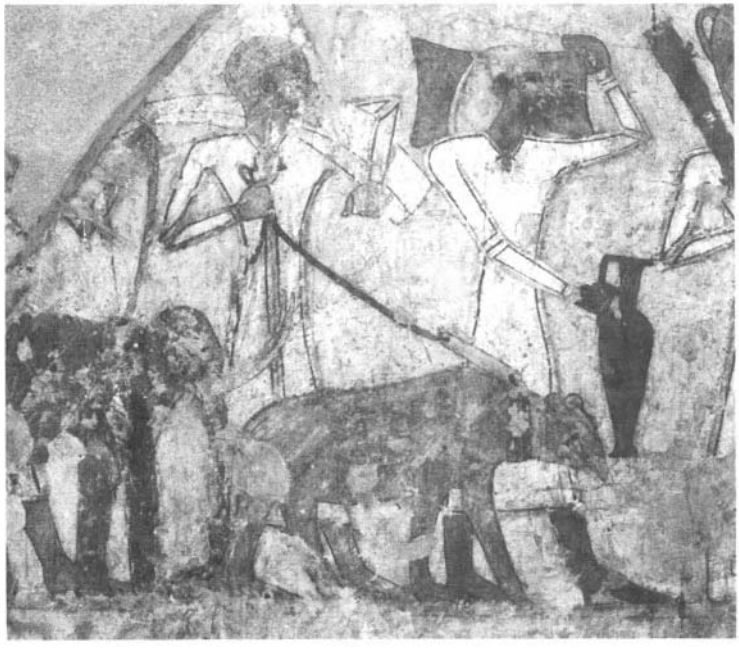

Fig. 3.11. Wall painting from the tomb chapel of Rekhmire at Thebes showing the arrival of foreign tribute, including live animals. In the lower register, Syrians deliver some prize products and fauna from their distant country. Here they are shown bringing a Syrian bear, wearing a collar and held on a leash. The man with the bear also carries a great elephant's tusk. Behind is a rather small Syrian elephant, also collared and leashed. 18th dynasty. Photo courtesy Patrick F. Houlihan.

mire (TT 100; fig. 3.11), Huy (TT 40), Kenamun (TT 162), Ineni (TT 81), and Amunezeh (TT 84), among others, feature delegations from foreign lands, Nubia, Libya, Crete, or Syria, bringing some of the live animals and merchandise characteristic of their respective locations for trade or as tribute (N. de G. Davies 1935; 1943; Müller-Wollermann 1986). Here, we meet such oddities as domestic humped cattle, newly imported from Asia, and the lion, leopard, cheetah, giraffe, Syrian elephant, Syrian bear, and the list goes on. In many instances, the species' diagnostic features are superbly indicated in these arresting paintings, the result of firsthand knowledge of them.

Drawings on ostraca are yet another source for catching glimpses of some of the nonnative animals imported into New Kingdom Egypt. For example, one well-known figured ostracon, discovered by Howard Carter in the Valley of the Kings, and presumably the work of an artisan of the Nineteenth Dynasty, displays on it the ear-

liest known representation of the Red Junglefowl or common chicken from ancient Egypt (Peck and Ross 1978: no. 118; Houlihan 1996a: fig. 141). This immediately recognizable bird, now ubiquitous the world over, was first introduced into Egypt, not for the table, but probably as an extraordinary rare prize, an object of marvel. There are only a few extant instances of this species occurring in Egyptian art, and all but two are attributable to the closing years of pharaonic history (Leclant 1980: figs. 76, 190; Houlihan 1986: 79–81). It was not to become a common resident along the banks of the Nile until Greco-Roman times.

Exotic birds and beasts all but vanish from Egyptian artistic sources following the crest of the nation's power during the New Kingdom. The Greek-speaking rulers of the Ptolemaic Dynasty were extraordinarily fascinated by, and concerned with, amassing fine zoological collections of their own, but very little of their efforts have been preserved for us in the iconographic record (Jennison 1937: 28–41; Rice 1983; Meyboom 1995).

APPENDIX: THE RANGE OF ANIMAL LIFE IN EGYPTIAN ART AND HIEROGLYPHS

What follows is a systematic list of all the various animal life that can confidently be identified in Egyptian art and hieroglyphs. It builds upon a somewhat similar one complied by Lothar Störk in the *Lexikon der Ägyptologie* (Störk 1977). The present list draws on imagery ranging in date from the earliest Predynastic times to the close of the Ptolemaic period, and includes creatures represented in a wide array of media. Some animals, occasionally professed to be readily distinguishable in the iconographic repertoire, such as the aardvark (*Orycteropus afer*), otter (*Lutra* sp.), warthog (*Phacochoerus aethiopicus*), and dolphin (*Delphinus delphis*), to name but four mammals, have been excluded from this survey because it is thought that these proposed identifications do not stand up to the rigors of close scrutiny.[4] Only those animals that can be identified with reasonable certainty are given here; speculations have been kept to an absolute minimum. The list includes a number of birds and beasts that are only known from single or rare occurrences, as well as those that are illustrated

[4] These highly questionable identifications persist in the recent work of Osborn and Osbornová (1998).

ubiquitously over the course of three thousand years of pharaonic civilization, such as those employed as standard hieroglyphs. In addition, the list is not restricted to indigenous fauna, but also contains a variety of foreign specimens occurring in Egyptian art, as in the case of the Syrian bear, and some of the exotic fishes and other marine animals, dwellers of the Red Sea and Indian Ocean, portrayed in the splendid reliefs depicting the voyage to the fabled land of Punt in Queen Hatshepsut's mortuary temple at Deir el-Bahari. The creatures are arranged in taxonomic order. After each form, I have generally cited a pair of references that will point the reader to either a typical or an especially noteworthy example of it. Those wishing specific information on individual animals listed below are encouraged to consult the comprehensive *Lexikon der Ägyptologie* (Helck, Otto and Westendorf 1975–92), which includes extensive lemmas covering a great many of them, and now also Redford (2001).

A. Class: Mammalia

1. Long-eared or Desert Hedgehog *Hemiechinus auritus* and *Paraechinus aethiopicus* (Boessneck 1988: figs. 21 and 44b; Houlihan 1996a: figs. 34 and 49–50)
2. Shrew *Crocidura* sp. (Boessneck 1988: fig. 97; Arnold 1995: no. 43)
3. Bat (order Chiroptera) (N. M. Davies 1949: pl. III; Houlihan 1986: figs. 195–199; 1996a: fig. 113)
4. Green Monkey *Cercopithecus aethiops* (Boessneck 1988: figs. 87 and 94; Houlihan 1996a: pl. VI and fig. 73)
5. Hamadryas Baboon *Papio hamadryas* (Boessneck 1988: figs. 230a–b; Houlihan 1996a: figs. 69–70, and pls. XXVI, XXX)
6. Olive or Anubis Baboon *Papio cynocephalus* (Houlihan 1996a: figs. 72 and 145; Houlihan 1997: figs. 2, 4, 6, 7)
7. Desert Hare *Lepus capensis* (Boessneck 1988: figs. 42 and 48; Houlihan 1996a: figs. 51–52)
8. North African Porcupine *Hystrix cristata* (Wreszinski 1936: pl. 103; Houlihan 1996a: fig. 33)
9. House or Spiny Mouse *Mus musculus* and *Acomys cahirinus* (Arnold 1995: nos. 77–78; Houlihan 1996a: fig. 149)
10. Field Rat *Arvicanthis niloticus* (W. S. Smith 1965: fig. 179; Drummond, Janssen and Janssen 1990: fig. 3)
11. Jerboa *Jaculus* sp. (Boessneck 1988: figs. 43–44; Arnold 1995: no. 18)

12. Lion *Panthera leo* (Boessneck 1988: fig. 85; Houlihan 1996a: figs. 65–68)
13. Leopard *Panthera pardus* (Boessneck 1988: fig. 94; Houlihan 1996a: figs. 3, 66, pl. XVI)
14. Cheetah *Acinonyx jubatus* (N. de G. Davies 1943, 2: pl. XVII; Aldred 1972: pl. 18)
15. Jungle or Wild Cat *Felis chaus* and *Felis sylvestris* (Malek 1993: fig. 20; Houlihan 1996a: fig. 33)
16. Domestic cat *Felis catus* (Malek 1993: figs. 32–44; Houlihan 1996a: figs. 60–64 and pl. XXIII)
17. Serval *Felis serval* (Malek 1993: fig. 13; Pinch 1993: pls. 43–45)
18. Caracal *Caracal caracal* (Boessneck 1988: fig. 35; Osborn and Osbornová 1998: figs. 7-191, 7-193.)
19. Golden Jackal *Canis aureus* (Wreszinski 1936: pls. 16 and 103; Houlihan 1996a: figs. 2, 33, 58–59)
20. Domestic dog *Canis familiaris* (Boessneck 1988: figs. 3, 20–21, 90–94; Houlihan 1996a: figs. 34–35, 48, 56–57 and pls. II, XV, XXXII)
21. Cape Hunting Dog *Lycaon pictus* (Boessneck 1988: figs. 11a–b; Houlihan 1996a: fig. 54 and pl. I.
22. Red Fox *Vulpes vulpes* (Saleh and Sourouzian 1987: no. 25a; Houlihan 1996a: pl. XXI)
23. Striped Hyena *Hyaena hyaena* (Boessneck 1988: figs. 54–55; Houlihan 1996a: pl. XI)
24. Honey Badger or Ratel *Mellivora capensis* (Keimer 1942: 11–14 with figs. 7–9; Churcher 1984: figs. 34–35)
25. Striped Weasel *Poecilictis libyca* (Wreszinski 1936: pl. 84; Houlihan 1996a: fig. 32)
26. Common Genet *Genetta genetta* (Boessneck 1988: figs. 33–34; Houlihan 1996a: figs. 84 and 95)
27. Egyptian Mongoose or Ichneumon *Herpestes ichneumon* (Houlihan 1996a: figs. 83, 86, 95 and pl. X; Houlihan 1996b: pls. I–II)
28. African Elephant *Loxodonta africana* (Boessneck 1988: fig. 9; Houlihan 1996a: figs. 30–31)
29. Syrian Elephant *Elephas maximus* (Boessneck 1988: figs. 75–76; Houlihan 1996a: pl. XV)
30. African Wild Ass *Equus africanus* (Davies and Gardiner 1962: pl. III; Decker and Herb 1994: pl. CLXXXIV)
31. Domestic donkey *Equus asinus* (Boessneck 1988: figs. 12, 105,

129–131; Houlihan 1996a: figs. 23–26 and pl. XIII)

32. Horse *Equus caballus* (Arnold 1995: nos. 69–71; Houlihan 1996a: figs. 27–29 and pl. XVII)
33. Hinny or mule (Boessneck 1988: figs. 132 and 137; Houlihan 1996a: fig. 29)
34. Black or White Rhinoceros *Diceros bicornis* and *Ceratotherium simum* (Boessneck 1988: fig. 74; Houlihan 1996a: figs. 30 and 143)
35. Domestic pig *Sus domesticus* (Boessneck 1988: fig. 128; Houlihan 1996a: figs. 20–22)
36. Hippopotamus *Hippopotamus amphibius* (Boessneck 1988: figs. 57 and 59; Houlihan 1996a: figs. 78–79 and pls. IX–X, XIV, XXXIV)
37. Deer (family Cervidae) (Houlihan 1987: figs. 1–3; Houlihan 1996a: figs. 35, 46–47)
38. Giraffe *Giraffa camelopardalis* (Boessneck 1988: fig. 11a; Houlihan 1996a: figs. 35, 54 and pls. I, XV)
39. Roan Antelope *Hippotragus equinus* (Keimer 1943: figs. 1–2; Boessneck 1981: pl. 18)
40. Scimitar-horned Oryx *Oryx gazella* (Boessneck 1988: figs. 22, 46, 51, 52; Houlihan 1996a: figs. 34–38 and pl. I)
41. Addax *Addax nasomaculatus* (Spencer 1993: fig. 84; Houlihan 1996a: fig. 40)
42. Bubal Hartebeest *Alcelaphus buselaphus* (Boessneck 1988: figs. 10, 21, 38; Houlihan 1996a: figs. 34, 39–41)
43. Dorcas Gazelle *Gazella dorcas* (Boessneck 1988: figs. 20, 39, 49, 50, 52, 89; Houlihan 1996a: figs. 74–75 and pls. I–II)
44. Soemmering's Gazelle *Gazella soemmeringii* (Wreszinski 1936: pl. 18; Boessneck 1988: fig. 38)
45. Slender-horned Gazelle *Gazella leptoceros* (Boessneck 1953: fig. 4; 1981: pl. 2)
46. Persian Gazelle *Gazella subgutturosa* (Boessneck 1988: fig. 79; Beaux 1990: pls. X–XII)
47. Gerenuk *Litocranius walleri* (Asselberghs 1961: pl. LXXXIX; Spencer 1993: fig. 35)
48. Nubian Ibex *Capra ibex* (Boessneck 1988: figs. 7, 47, 51–52; Houlihan 1996a: figs. 34, 42–44 and pl. I)
49. Barbary Sheep *Ammotragus lervia* (Boessneck 1988: fig. 29; Houlihan 1996a: figs. 31 and 45)
50. Aurochs or wild cattle *Bos primigenius* (Wreszinski 1936: pls. 16,

99–102; Decker and Herb 1994: pls. CLXXXIII and CLXXXV)

51. Domestic cattle *Bos taurus* (Boessneck 1988: figs. 12, 47, 51, 105–119; Houlihan 1996a: figs. 7–15 and pls. VIII, XV, XXII)
52. Domestic humped cattle or zebu *Bos indicus* (W. S. Smith 1965: figs. 41 and 44; Boessneck 1988: figs. 116, 119)
53. Domestic goat *Capra hircus* (Boessneck 1988: figs. 105, 124–127; Houlihan 1996a: figs. 18–19 and pl. XIII)
54. Domestic sheep *Ovis aries* (Boessneck 1988: figs. 1, 12, 105, 121; Houlihan 1996a: figs. 5, 16–17 and pl. XXVIII)
55. Syrian Bear *Ursus arctos syriacus* (Boessneck 1988: figs. 75–76; Houlihan 1996a: fig. 133 and pl. XV)

B. Class: Aves

1. Ostrich *Struthio camelus* (Houlihan 1986: figs. 1–4; 1996a: figs. 30 and 120)
2. Diver *Gavia* sp. (Houlihan 1986: fig. 6; 1996a: fig. 137)
3. Cormorant *Phalacrocorax* sp. (Houlihan 1986: figs. 7–9; 1996a: pl. XII)
4. Darter *Anhinga rufa* (Houlihan 1986: fig. 10; 1996a: fig. 138)
5. White or Pink-backed Pelican *Pelecanus onocrotalus* and *Pelecanus rufescens* (Houlihan 1986: figs. 11–13; 1996a: pl. XII)
6. Dalmatian Pelican *Pelecanus crispus* (Houlihan 1986: fig. 14; 1996a: fig. 103)
7. Gray Heron *Ardea cinerea* (Houlihan 1986: figs. 15–19; 1996a: pl. XXIX)
8. Egret *Egretta* sp. (Houlihan 1986: figs. 20–22; 1996c: fig. 6 no. 37)
9. Night Heron *Nycticorax nycticorax* (N. M. Davies 1949: pl. II no. 12; Houlihan 1986: fig. 23)
10. Little Bittern or Bittern *Ixobrychus minutus* and *Botaurus stellaris* (Houlihan 1986: figs. 24–26; 1996a: pl. V)
11. Black Stork *Ciconia nigra* (N. M. Davies 1949: pl. II no. 7; Houlihan 1986: fig. 27)
12. Saddle-billed Stork *Ephippiorhynchus senegalensis* (Houlihan 1986: figs. 28–30; Ciałowicz 1992: figs. 1 and 5–6)
13. Glossy Ibis *Plegadis falcinellus* (Houlihan 1986: figs. 32–33; 1996c: fig. 3 no. 6)
14. Sacred Ibis *Threskiornis aethiopicus* (Houlihan 1986: figs. 34–37; 1996a: pl. V and fig. 115)

15. Hermit Ibis or Waldrapp *Geronticus eremita* (Houlihan 1986: figs. 39–42; 1996a: fig. 114)
16. Spoonbill *Platalea leucorodia* (Houlihan 1986: figs. 43–46; Houlihan 1996a: fig. 106)
17. Greater Flamingo *Phoenicopterus ruber* (Houlihan 1986: figs. 47–50; 1996a: fig. 42 and pl. X)
18. Black Kite *Milvus migrans* (Houlihan 1986: figs. 51–54; 1996a: fig. 88)
19. Egyptian Vulture *Neophron percnopterus* (Houlihan 1986: fig. 55; 1996a: fig. 116)
20. Griffon Vulture *Gyps fulvus* (Houlihan 1986: fig. 56; 1996a: fig. 123)
21. Lappet-faced Vulture *Aegypius tracheliotus* (Houlihan 1986: figs. 57–58; 1996a: figs. 117, 121, 124)
22. Long-legged Buzzard *Buteo rufinus* (Gardiner 1957: 467 G4; Houlihan 1986: fig. 59)
23. Lesser Kestrel or Kestrel *Falco naumanni* and *Falco tinnunculus* (Héry and Enel 1993: figs. 131–133; Houlihan 1996a: pl. XXIX)
24. "Horus-falcon" *Falco peregrinus* and *Falco biarmicus* (Houlihan 1986: figs. 61–65; 1996a: figs. 118–119 and pl. XXXIII).
25. Mute Swan *Cygnus olor* (Houlihan 1986: figs. 66a–b; 1996a: fig. 102)
26. Whooper or Bewick's Swan *Cygnus cygnus* and *Cygnus bewickii* (Wreszinski 1936: pl. 17; Houlihan 1986: figs. 67–71)
27. Greylag Goose *Anser anser* (Houlihan 1986: fig. 72; Boessneck 1988: figs. 144–145)
28. White-fronted Goose *Anser albifrons* (Houlihan 1986: figs. 76–82; 1996a: fig. 100)
29. Bean Goose *Anser fabalis* (Houlihan 1986: fig. 83; 1996a: fig. 100)
30. Red-breasted Goose *Branta ruficollis* (Houlihan 1986: fig. 84; 1996a: pl. III and fig. 100)
31. Egyptian Goose *Alopochen aegyptiaca* (Houlihan 1986: figs. 85–89; 1996a: pl. XXIII)
32. Ruddy Shelduck *Tadorna ferruginea* (Houlihan 1986: figs. 90–91; Ziegler 1990: 28)
33. Common Shelduck *Tadorna tadorna* (Houlihan 1986: fig. 92)
34. European Teal *Anas crecca* (Houlihan 1986: figs. 93–95; 1996a: fig. 97)
35. European Wigeon *Anas penelope* (Houlihan 1986: figs. 96–97; Boessneck 1988: fig. 46)

36. Pintail *Anas acuta* (Houlihan 1986: figs. 98–103; 1996a: figs. 96–97 and pl. XXIV)
37. Tufted Duck *Aythya fuligula* (Houlihan 1986: fig. 104)
38. Quail *Coturnix coturnix* (Houlihan 1986: figs. 105–109; 1996a: fig. 110 and pl. XXIX)
39. Red Junglefowl or chicken *Gallus gallus* (Houlihan 1986: figs. 111–115; 1996a: figs. 141–142)
40. Helmeted Guineafowl *Numida meleagris* (Houlihan 1986: figs. 116–117; 1996a: fig. 111)
41. Common Crane *Grus grus* (Houlihan 1986: figs. 118–121, 123–124; 1996a: figs. 98–99, 109)
42. Demoiselle Crane *Anthropoides virgo* (Houlihan 1986: figs. 122, 124–125; Boessneck 1988: figs. 47, 160, 169a)
43. Purple Gallinule *Porphyrio porphyrio* (Houlihan 1986: figs. 126–127; 1996a: pl. V)
44. European Coot *Fulica atra* (N. M. Davies 1949: pl. II no. 5; Houlihan 1986: figs. 128–129)
45. Painted Snipe *Rostratula benghalensis* (N. M. Davies 1949: pl. II no. 14; Houlihan 1986: fig. 130)
46. Ringed Plover or Little Ringed Plover *Charadrios hiaticula* and *Charadrios dubius* (N. M. Davies 1949: pl. II no. 19; Houlihan 1986: fig. 131)
47. Lapwing *Vanellus vanellus* (Houlihan 1986: figs. 132–137; 1996a: figs. 76 and 107)
48. Spur-winged Plover *Vanellus spinosus* (Houlihan 1986: figs. 138–139; 1996c: fig. 5 no. 20)
49. Sandpiper *Tringa* sp. (Houlihan 1986: figs. 140–141; Houlihan 1996c: fig. 3 no. 8)
50. Avocet *Recurvirostra avosetta* (Houlihan 1986: figs. 142–144; 1996c: fig. 4 no. 13)
51. Pin-tailed Sandgrouse *Pterocles alchata* (Davies 1949: pl. III no. 29; Houlihan 1986: fig. 145)
52. Rock Pigeon *Columba livia* (Houlihan 1986: figs. 146–149; Boessneck 1988: fig. 166b)
53. Turtle Dove *Streptopelia turtur* (Houlihan 1986: figs. 150–154; 1996a: fig. 101)
54. Great Spotted Cuckoo *Clamator glandarius* (Houlihan 1986: fig. 155; Beaux 1990: pls. XXXI–XXXIII)
55. Barn Owl *Tyto alba* (Houlihan 1986: frontispiece and figs. 156–158; 1996a: fig. 95 and pl. XX)

56. "Eared" owl *Bubo bubo* and *Asio otus* (Houlihan 1986: fig. 159)
57. Roller *Coracias garrulus* (N. M. Davies 1949: pl. III no. 28; Houlihan 1986: figs. 160–161)
58. Kingfisher *Alcedo atthis* (Houlihan 1986: fig. 162; 1996a: pl. V)
59. Pied Kingfisher *Ceryle rudis* (Houlihan 1986: figs. 163–165; 1996a: pl. V)
60. Bee-eater *Merops* sp. (Houlihan 1986: fig. 166)
61. Hoopoe *Upupa epops* (Houlihan 1986: figs. 167–171; 1996a: pl. V)
62. Crag Martin or Pale Crag Martin *Hirundo rupestris* and *Hirundo obsoleta* (Houlihan 1986: fig. 172)
63. Swallow *Hirundo rustica* (Houlihan 1986: figs. 173–176; 1996a: fig. 63)
64. House Martin *Delichon urbica* (Houlihan 1986: fig. 177)
65. White Wagtail *Motacilla alba* (Houlihan 1986: fig. 178; 1996c: fig. 5 no. 26)
66. Warbler *Sylvia* sp. (Houlihan 1996c: fig. 6 no. 44)
67. Red-backed Shrike *Lanius collurio* (Houlihan 1986: fig. 179; Boessneck 1988: fig. 181a)
68. Masked Shrike *Lanius nubicus* (Houlihan 1986: figs. 180–181; Boessneck 1988: figs. 181a–b)
69. Golden Oriole *Oriolus oriolus* (Houlihan 1986: figs. 182–185; 1996a: fig. 112)
70. Crow *Corvus* sp. (Houlihan 1986: figs. 186–192; 1996a: figs. 65 and 146)
71. Redstart *Phoenicurus phoenicurus* (Houlihan 1986: fig. 193; Boessneck 1988: figs. 181a–b)
72. House Sparrow *Passer domesticus* (Mekhitarian 1978: 137; Houlihan 1986: fig. 194)

C. Class: Reptilia

1. African Softshell Turtle *Trionyx triunguis* (Fischer 1968: frontispiece; Arnold 1995: nos. 36, 38–39)
2. Nile Crocodile *Crocodylus niloticus* (Boessneck 1988: figs. 57 and 59; Houlihan 1996a: figs. 78–79, 131 and pls. VIII, X, XXXV)
3. European Chameleon *Chamaeleo chamaeleon* (N. M. Davies 1958: pl. I; Boessneck 1988: fig. 193a)
4. Egyptian or Turkish Gecko *Tarentola annularis* and *Hemidactylus turcicus* (Boessneck 1988: fig. 191; Andrews 1994: fig. 48)

5. Horned Viper *Cerastes cerastes* (Beaux and Goodman 1993: fig. 4a–g; Houlihan 1996a: fig. 121)
6. Black-necked Spitting Corbra *Naja mossambica* (Beaux and Goodman 1993: fig. 6a–c; Houlihan 1996a: fig. 119)
7. Egyptian Cobra *Naja haje* (Beaux and Goodman 1993: fig. 8a–b; Houlihan 1996a: figs. 122–125)
8. African Rock Python *Python sebae* (Churcher 1984: fig. 34a; Ciałowicz 1992: figs. 1, 5–7)

D. Class: Amphibia
1. Frog *Rana* sp. (Arnold 1995: nos. 37–38; Houlihan 1996a: ix and figs. 82, 131)
2. Toad *Bufo* sp. (Boessneck 1988: fig. 205a; Arnold 1995: nos. 37–38)

E. Class: Pisces
1. Elephant-snout fish *Gnathonemus cyprinoides* (Gamer-Wallert 1970: pls. I–II nos. 27 and 32; Brewer and Friedman 1989: figs. 3.4–5)
2. Elephant-snout fish *Petrocephalus bovei* (Gamer-Wallert 1970: pls. I–II no. 9; Boessneck 1988: fig. 213)
3. Elephant-snout fish *Mormyrus caschive* (Gamer-Wallert 1970: pls. I–II nos. 4 and 19; Brewer and Friedman 1989: fig. 3.7)
4. Elephant-snout fish *Mormyrus kannume* (Gamer-Wallert 1970: pls. I–II no. 37; Brewer and Friedman 1989: fig. 3.6)
5. Elephant-snout fish *Mormyrus niloticus* (Gamer-Wallert 1970: pls. I–II no. 29; Brewer and Friedman 1989: fig. 3.8)
6. Elephant-snout fish *Hyperopisus bebe* (Gamer-Wallert 1970: pls. I–II no. 43; Brewer and Friedman 1989: figs. 3.9–10)
7. Tigerfish *Hydrocyon forskalii* (Boessneck 1988: fig. 214; Brewer and Friedman 1989: fig. 3.11)
8. Tigerfish *Alestes* sp. (Brewer and Friedman 1989: fig. 3.12; Decker and Herb 1994: pl. CCXLI)
9. Moonfish *Citharinus* sp. (Gamer-Wallert 1970: pls. I–II nos. 12, 22, 41; Brewer and Friedman 1989: figs. 3.13–14)
10. Carp *Labeo niloticus* (Gamer-Wallert 1970: pls. I–II nos. 21, 26, 54; Boessneck 1988: figs. 209 and 213)
11. Carp *Barbus bynni* (Gamer-Wallert 1970: pls. I–II no. 44; Brewer and Friedman 1989: figs. 3.16–17)

12. Clarid catfish *Clarias lazera* (Gamer-Wallert 1970: pls. I–II nos. 20 and 28; Boessneck 1988: fig. 213)
13. Clarid catfish *Clarias anguillaris* (Gamer-Wallert 1970: pls. I–II nos. 11, 34, 56; Boessneck 1988: fig. 213)
14. Clarid catfish *Heterobranchus* sp. (Gamer-Wallert 1970: 32 fig. 10; Brewer and Friedman 1989: fig. 3.21)
15. Schilbeid catfish *Schilbe* sp. (Gamer-Wallert 1970: pls. I–II nos. 15 and 50; Brewer and Friedman 1989: figs. 3.22–23)
16. Bagrid catfish *Bagrus* sp. (Brewer and Friedman 1989: fig. 3.24)
17. Upside-down catfish *Synodontis batensoda* (Gamer-Wallert 1970: pls. I–II nos. 17 and 46; Brewer and Friedman 1989: fig. 3.27)
18. Upside-down catfish *Synodontis schall* (Gamer-Wallert 1970: pls. I–II nos. 1, 18, 31, 38, 51; Brewer and Friedman 1989: figs. 3.25–26)
19. Electric Catfish *Malapterurus electricus* (Gamer-Wallert 1970: pls. I–II nos. 30, 35, 42, 47; Brewer and Friedman 1989: figs. 3.28–29)
20. Egyptian Eel *Anguilla vulgaris* (Gamer-Wallert 1970: pls. I–II nos. 10 and 23; Brewer and Friedman 1989: figs. 3.30–31)
21. Gray mullet *Mugil* sp. (Gamer-Wallert 1970: pls. I–II nos. 2–3, 16, 25, 33, 36, 39, 45, 52–53, 57; Brewer and Friedman 1989: figs. 3.32–33)
22. Nile Perch *Lates niloticus* (Gamer-Wallert 1970: 39 fig. 18; Brewer and Friedman 1989: figs. 3.34–36)
23. Tilapia (or *bolti*) *Tilapia* sp. (Gamer-Wallert 1970: pls. I–II nos. 6, 14, 40, 48, 55; Brewer and Friedman 1989: figs. 3.36–38)
24. Pufferfish *Tetrodon fahaka* (Gamer-Wallert 1970: pls. I–II nos. 7 and 49; Brewer and Friedman 1989: figs. 3.40–41)
25. Eagle ray (family Myliobatidae) (Danelius and Steinitz 1967: 19 figs. 1–2; Gamer-Wallert 1970: pl. VII nos. 1–2)
26. Swordfish *Xiphias gladius* (Gamer-Wallert 1970: pl. VII nos. 5–6; Houlihan 1996a: fig. 135)
27. Scorpionfish (family Scorpaenidae) (Gamer-Wallert 1970: pl. VII no. 13; Houlihan 1996a: fig. 134)
28. Spadefish *Platax pinnatus* (Gamer-Wallert 1970: pl. VII nos. 10–11; Boessneck 1988: fig. 216b)
29. Unicorn Fish *Naso unicornis* (Gamer-Wallert 1970: pl. VII no. 7; Boessneck 1988: fig. 216a)
30. Triggerfish (family Balistidae) (Gamer-Wallert 1970: pl. VII nos. 8–9)

31. Butterfly fish (family Chaetodontidae) (Danelius and Steinitz 1967: 21 figs. 4–5; Gamer-Wallert 1970: pl. VII nos. 14–15)
32. Surgeonfish (family Acanthuridae) (Gamer-Wallert 1970: pl. VII no. 16)

F. Classes: Bivalvia and Gastropoda
1. Mollusk shells (Aldred 1971: pls. 2, 33, 35, 45, 79; Saleh and Sourouzian 1987: nos. 23 and 109; Kemp 1989: fig. 28)

G. Class: Cephalopoda
1. Squid *Loligo* sp. (Naville 1898: pl. LXXIII; Boessneck 1988: fig. 215a)

H. Class: Arachnida
1. Scorpion (order Scorpionidae) (Letellier and Ziegler 1977: nos. 114–115; Houlihan 1996a: figs. 126–127 and pl. XXXI)

I. Class: Crustacea
1. Spiny lobster *Panulirus* sp. (Naville 1898: pls. LXIX and LXXIII; Boessneck 1988: fig. 215b)

J. Class: Chilopoda
1. Centipede *Scolopendra morsitans* (Gardiner 1957: 478 L5; Boessneck 1988: fig. 251a)

K. Class: Insecta
1. Grasshopper or locust (family Acrididae) (Boessneck 1988: figs. 204, 243–244; Houlihan 1996a: fig. 131 and pl. XXVII)
2. Honeybee *Apis mellifera* (Boessneck 1988: figs. 152 and 250; Houlihan 1996a: figs. 123 and 130)
3. Housefly (family Muscidae) (Andrews 1994: figs. 4, 41, 48; Houlihan 1996a: fig. 132)
4. Dragonfly (order Odonata) (Arnold 1995: no. 32; Houlihan 1996a: fig. 131)
5. Click beetle *Agrypnus notodonta* (Hendrickx 1996: fig. 5 and pl. III; Houlihan 1996a: fig. 128)
6. Jewel beetle (family Buprestidae) (Keimer 1931: 161–162; Kritsky 1993: 35–36)
7. Rhinoceros beetle *Oryctes nascicarnis* (Letellier and Ziegler 1977: no. 116; Arnold 1995: no. 60)

8. Sacred Scarab *Scarabaeus sacer* (Andrews 1994: figs. 44, 47, 56–59; Houlihan 1996a: fig. 129 and pl. XXVI)
9. Plain Tiger butterfly *Danaus chrysippus* (Boessneck 1988: figs. 58 and 63; Houlihan 1996a: pls. V, XXIII–XXIV)

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CHAPTER FOUR

ANIMALS IN MESOPOTAMIAN ART

CATHERINE BRENIQUET

From the beginning, man has existed alongside animals. To survive, humans were forced to adapt to the difficult subsistence strategies of hunting and following wild herds. Humans have depicted animals since art came into being about 35,000 years ago. Mesopotamia, the cradle of civilization, is no exception to this rule, but our documentation falls far short of illustrating all the steps in the evolution of animal representation since the dawn of human settlement in Mesopotamia. Its historical development, its geography and our poor documenary sources help to explain these lacunae in our understanding.

By common accord, we call the valley of the Tigris and the Euphrates Rivers "Mesopotamia," although the term was not used by the inhabitants of the area themselves. These two rivers, among the longest in the world, spring from the mountains of Turkey and flow into the Arabo-Persian Gulf after a journey of several thousand kilometers. Their deep valleys widen soon after leaving the mountainous region. After several hundred kilometers, alluvial deposits cover the floor of the river valleys before reaching the gigantic delta that developed over time and has become the setting of the marshes. Mountains, steppes, deserts, plains and aquatic areas accommodated a varied fauna through history, quite different from that today.

Like the rest of the Near East, Mesopotamia has been inhabited since Paleolithic times, but we only have good evidence of settlements from 7000 B.C. Between 7000 B.C. and the conquests of Alexander the Great in 333 B.C., Mesopotamia hosted some of the most important developments in human history: the rise of a farming economy, the advent of proto-urban societies, the first cities and empires. We must remember that Mesopotamian animal art is closely related to the socio-economic landscape, however, studies of the economy, the artistic level, or the concern with naturalism can not provide us with a complete picture of animal representation.

DOCUMENTATION AND HISTORICAL BACKGROUND

The documents to be collected over such a long period are both numerous and limited—numerous because of the size of the inventory, which is made up of heterogeneous and fragmentary objects, and limited because they reveal the situation only incompletely. In fact, they take into account only the artistic objects that have survived the ages. The materials are mostly stone and baked clay, objects made of wood, fabric and bone being scarcely documented in the surviving inventory. Moreover, the remains of wall paintings discovered at a few sites (Bouqras, Umm Dabaghiyeh, Uqair, Mari, Til Barsip [Spycket 1988, with references]) are in a condition far from the original. We face the same problem with plated or solid metallic objects, which were cast and re-used many times during antiquity, although the lions from Dagan's temple at Mari, and the Sumerian four-equid chariot from Tell Agrab (fig. 4.1) are both exceptions to this practice.

Fig. 4.1. Protodynastic bronze chariot from the "Shara temple," Tell Agrab. H. 7 cm. Iraq Museum, Baghdad. Photo courtesy Hirmer Verlag, Munich.

The historical background can help us to understand to some extent the representation of animals in art, but it should be remembered that the period under consideration is so extensive that it is difficult to compare such differing stages as that of the early villages and that of the early empires. Human attitudes changed over time and the relationship with the animal world changed as well. Because animal art in the second millennium in Mesopotamia is closely connected to gods and religion, which is treated elsewhere in this volume, and because of the close connections of Mesopotamian art in the historical periods with Syrian and Iranian art, which are also treated in this volume, I have chosen to focus more heavily on the archaic periods of Mesopotamian iconography.

From 7000 B.C., small settlements covered Mesopotamia and farming was the primary means of subsistence. It was in this period throughout the Near East that humans subjugated the vegetal and animal worlds through agriculture and husbandry. By about 7000 B.C., domestic animals were being raised for slaughter. A few hundred years later, humans were exploiting their secondary products. Animals now were being raised for work, for milk (and derivative products like cheese), and for their fleece and hides. It is in connection with these secondary uses that specific species were sometimes selected for depiction in the iconography. Of those animals not domesticated, some were hunted for food or other purposes. Species varied according to geographical areas: sheep and goats in the northern part of Mesopotamia, and cattle and pigs in the south. An analysis of the artistic evidence reveals the role played by animals in daily life: felines were hunted throughout the centuries, bovines could be harnessed to a cart from the Uruk period (Amiet 1980a: GMA 662), onagers appear attached to war chariots since protodynastic times (fig. 4.2), and horses in the first millennium B.C. Urukian and Sumerian arts (often on cylinder-seals) show milking and churning scenes or weaving processes associated with spiders (Amiet 1980a: GMA 335–37, 381, 1671 and pl. 87 [for milking and churning]; GMA 320, 338 [for weaving]). New species can be seen, for example sheep with twisted horns and shorn fleece on the great alabaster vase from Uruk (Amiet 1977: fig. 27; Ryder 1993: 11), or camels in the first millennium B.C. (Strommenger and Hirmer 1964: pl. 243). But these insights into daily life are not systematic: Artists never (with the exception of Assyrian art) tried to leave us specific information about their way of life.

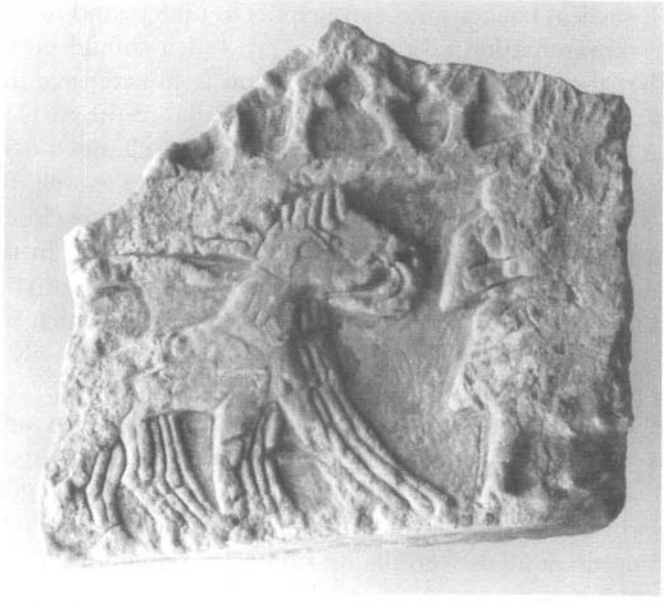


Fig. 4.2. Fragment of a Sumerian relief from Larsa showing four overlapping equids. Early Dynastic II. H. 15 cm. Iraq Museum, Baghdad. Photo courtesy J.-L. Huot, Délégation Archéologique Française en Iraq.

The secondary effects of urbanization resulted in a change in the relationship between men and animals. This evolution, at least from the origins of Mesopotamian art to the beginning of the second millennium B.C., is related to cultural developments in the form of the emergence of craftsmen, of technical knowledge, and of specific orders from the royal power. These changes resulted in more artistic documents, more realism, more precious or exotic materials, and more artistic stereotypes.

The realism so peculiar to the Urukian cylinder seals can be explained by the use of a drilling device that allows a more accurate depiction of quantity (fig. 4.3). Similarly, the lost wax technique, which was developed early, offered the artist more possibilities for making complex arrangements: The equids harnessed to the chariot from Tell Agrab seem ready to start running, pawing the ground and shaking their harnesses (fig. 4.1). Such a composition would have been difficult to carve in stone, even in numerous pieces. Such technical innovations aside, however, materials are not directly involved in the development of artistic depictions of animals in Mesopotamia.

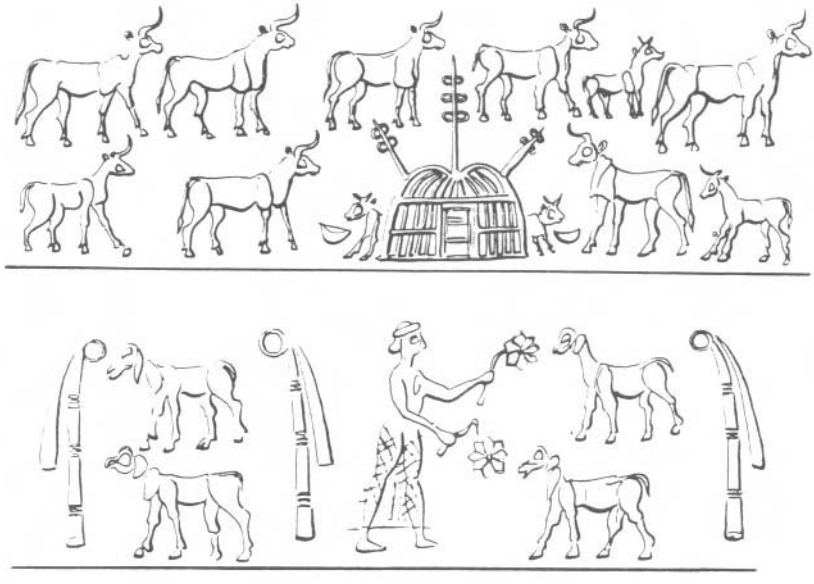


Fig. 4.3. Two impressions of Urukian cylinder seals: a) Khafadje, temple of Sin II (GMA 629), cowshed; b) Uruk, the "good shepherd" (GMA 638).

FORM, FUNCTION AND ARTISTIC STEREOTYPES

Two types of artifact are available to the art historian, objects in the round and two-dimensional objects. Objects carved or shaped in the round include figurines, statues, theriomorphic vessels and weights. Typically, baked clay was used for figurines and animal-shaped vases, with the exception of rhyta, which are often metallic. Most of the animal statues (of stone or metal) were used as stands, as shown by a metallic rod located on the back of the animal in the case of the gold and lapis-lazuli ram in a tree from the Royal Cemetery at Ur, or the three bronze goats from Larsa (Strommenger and Hirmer 1964: pl. 80; Amiet 1977: fig. 85). This peculiar function is confirmed by the presence on some objects of a vase on the back of the animal, sometimes connected with a hole and an internal pipe, suggesting their use as a libation device (Behm-Blancke 1979: 88, Abb. 61). Many of these, belonging to the Uruk period, could be part of the temple furniture. However, the animals themselves were not worshiped.

The second more abundant part of our documentation are two-

Fig. 4.4. Protodynastic bronze lintel from the temple of El 'Ubaid. Composite bird grasping two stags. H. 107 cm. Photo courtesy of the Trustees of the British Museum, London.

dimensional objects, including low relief stelae, perforated panels in stone or ceramic, wall paintings, and hollow carved stamps or cylinder seals. Low relief and complex arrangements predominate. Stone vases from the Uruk period with high and low relief together (Amiet 1977: fig. 227, 230), as well as the great high relief lintel from El Ubaid are exceptions to this rule (fig. 4.4).

Both sculpture in the round and two-dimensional representation, however, make use of the same conventional ways of depicting animals. The artists' purpose was to depict animals in their most salient attitudes: full profile or full face, depending on the most meaningful one for each of them. Four legged animals are shown walking with their horned heads turned towards the spectator, lying down (bovines), or sitting and roaring (felines). These attitudes predominate among Urukian and Sumerian objects. Birds are shown flying away or pecking, or, less commonly, sleeping, their head reversed on their back, as in the case of duck weights. With the exception of a few motifs shown full face (Sumerian lion-headed eagle [fig. 4.4], Halafian bucrania [fig. 4.5], or Amorite harnessing on terracotta plaques [Spycket 1992: Taf. 48, IB 1795, 1883 and 1927]), animals are most often depicted one by one, in full profile. On complex compositions, the collective attitude of the herd, with animals close to each other, is used. On Sumerian glyptic, animals could also stand up on their hind legs, which were crossed. Only the lion

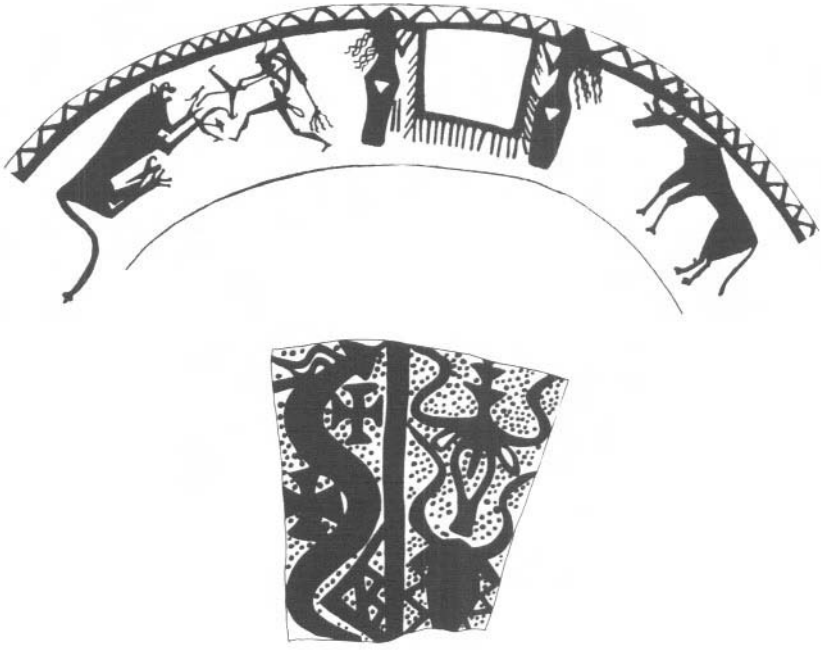


Fig. 4.5. Animal depictions on prehistoric wares. Halafian bowl from Arpachiyah. Internal drawing showing a complex scene with a lion hunt and one of the external metopes with bucrania and snake(?). H. 20 cm. After Hijara (1978: 126 fig. 1).

is shown with its body in profile and its head from above when pouncing upon its prey (for instance on Entemena's vase, see fig. 4.6b; Amiet 1977: fig. 335). Animals that move close to the ground, such as tortoises, snakes and scorpions, are always seen from above, as, for example, on the *kudurrus* of Nazimaruttash and Nebuchadnezzar I.

When animals are involved in scenes requiring movement, action is shown by the position of limbs suggesting walking. Only statues carved in the round allow a better depiction of muscular volumes in movement (Behm-Blancke 1979: Taf. 1). But artists were not always concerned with realism, although Urukian statuary is an exception. Depictions showing the animal crouched and ready to pounce are also rare: The Halafian vase from Arpachiyah on which a hunter is fighting with a crouched lioness is unique in Mesopotamian prehistoric art (fig. 4.5). When action is faster, especially in the case of harnessed chariots, equids stand on their hind legs with

their front ones raised. The flying gallop, well-known in Aegean art, does not seem to have been in common use by Mesopotamian artists, with the exception of some Urukian bone amulets on which the animal (often a lion) is seen stretched out while running (Behm-Blancke 1979: Taf. 21, 98–106).

Objects modeled in high relief, like the lintel from El Ubaid, are rare, and three-quarter views do not exist. In Mesopotamian art, relief is not far from drawing, and most of the time implies a two dimensional perception. The Urukian stone vases are good examples of this (e.g. Amiet 1977: fig. 235): Bulls carved in relief surround the vases, but their heads, depicted facing the spectator, are on the same plane as their whole bodies in an effort to reconcile drawing or low relief and curved surface. The result is that the relief is used as a *trompe-l'œil*. Human-faced bulls or lions guarding the doors of the Assyrian palaces are not in the round (Amiet 1977: figs. 595, 606; Deshayes 1969: 360). Their heads are carved in half round. Their fifth limb shows that these unusual sculptures were made to be seen exclusively in profile or full face, but never three-quarters.

Perspective is never truly expressed. When multiple animals are involved in the scene, harnessed equids for instance, outlines are divided into two or four as on Sumerian panels (fig. 4.2), the Standard of Ur (war face), and in Assyrian reliefs. Likewise, two animals can be shown, one behind the other, head and limbs "stacked" just out of line with each other.

Entire animals can be evoked by parts of their body. Metal or stone round heads with horns are the most frequent examples while in drawings and reliefs, animals can be reduced to a single detail: scales or feathers, spotted skin on Halafian painted ceramic, even bird footprints (Oppenheim 1943: Taf. XLIX, 7–9; XXVIII, 1; Herzfeld 1930: 23 Abb. 27) or carved limbs.

The use of iconographic stereotypes is linked to the desire to show animals in their most salient attitudes in order to remove all potential ambiguities. Some of these stereotypes are very old and provide indirect evidence that artists used sketch-books made of perishable materials of which we have no extant examples, even for household animals like large ruminants. These iconographic stereotypes, always adapted to new artistic demands, are the basis of Mesopotamian animal art. Among the most significant are the standing calf (but not the heifer), the line of goats or alternating ram and ewe, the

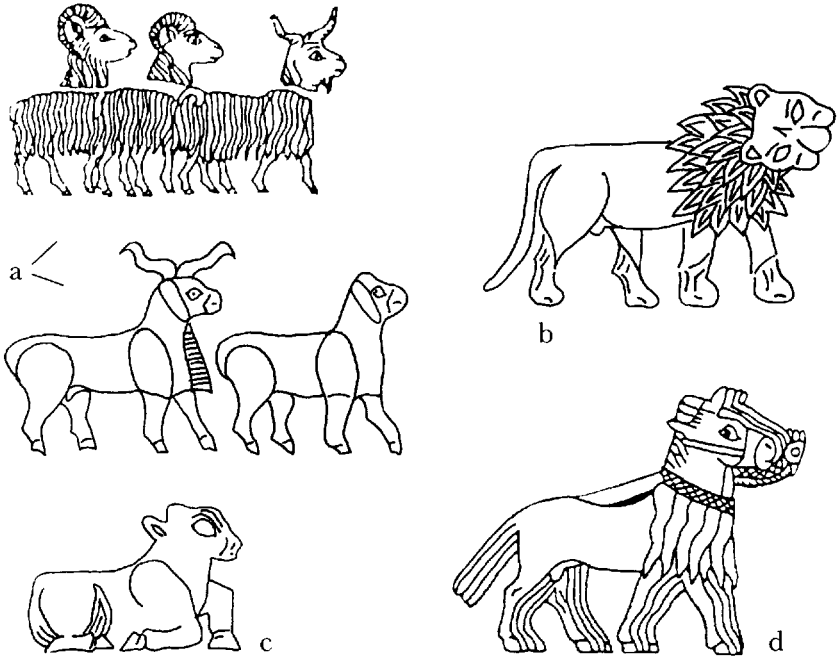


Fig. 4.6. Some of the most ancient artistic stereotypes: a) line of goats or alternating ram and ewe; b) roaring or leaping lion; c) kneeling calf; d) harnessed equids.

roaring or leaping lion, and the harnessed equids (fig. 4.6).[1]

After the Sumerian period, the peoples from the hills or from the desert merged with the urban populations of the plain, but this phenomenon is not linked to violent and massive invasions. None of the populations involved, even though accustomed to a different environment, brought with them a new animal symbolism. On the contrary, all of them adopted the old Mesopotamian artistic background. New elements are apparent, however, in a clear use of animal depictions in close relationship with the divinities. The second millennium B.C. is also known for contacts between cultural and political powers in the Near East, involving artistic exchanges and the diffusion, combined with distortion, of many animal motifs. Such

[1] They are, for example, used on Entemena's vase, Dudu's perforated relief, the great stone Urukian vase, the Urukian basin, the Standard of Ur, Etana's cylinder-seal, and the relief showing the siege of Lachish.

monsters as griffins and sphinxes are the clearest examples of this phenomenon.

REALISTIC OR SCHEMATIC DEPICTIONS?

With the exception of wild felines seen in the context of specific events (such as hunts), the Mesopotamian artist tended to favor common household animals in his depictions. Even so, the link between artistic depictions and natural reality is always poor. The most realistic depictions are household or domestic animals like sheep, cattle or equids, which are shown in their characteristic attitudes or in association with human daily activities. In contrast, the dog is poorly attested in Mesopotamian art before the first millennium B.C. when it is in close association with specific rituals, such as those associated with Gula and the healing arts (Braun-Holzinger 1984: 93–94, Taf. 61–63). Fish, reptiles and insects are depicted without detail in all periods, e.g., snakes on Halafian ware or in relief on the top of the Kassite *kudurrus*, and insect-shaped beads or pendants. With the exception of birds of prey identified by their hooked beak and spread wings, and ducks often asleep with their head on their backs, birds are evoked much more by their attitudes than by their anatomic details. The variety of birds in aquatic landscapes like the marshes is never shown in Mesopotamian art. Mesopotamian artists are not animal artists in the sense of modern European art and the renewed interest in nature in the second half of the second millennium (Kassite and Assyrian arts, especially in glyptic) probably has no direct link with a new regard for nature.

Regardless of object, medium or period, there is consistently a distinction between realistic and schematic rendering. From prehistoric times, we know of baked clay animal figurines, sometimes painted, as well as paintings of animals on ceramic. Most of the figurines are schematic (fig. 4.7), but a few of them are realistic, for example the Ubaidian pig's head from Tell el'Oueili (Breniquet 1996: 157, pl. I-3). Most impressive are the stone heads of birds of prey from Nemrik (fig. 4.8) carved in the round. These heads were probably associated with other perishable parts of an unknown object and used, as well as other figurines, for specific rituals linked with hunting, death or fertility. In the present state of our knowledge, evolution from schematic to realistic rendering (or the reverse) is not attested and

Fig. 4.7. Schematic figurine of a wild pig from Tell el'Oueili, Ubaid 4. Baked clay with paint. H. 5 cm. Iraq Museum, Baghdad. Courtesy J.-L. Huot, Délégation Archéologique Française en Iraq.

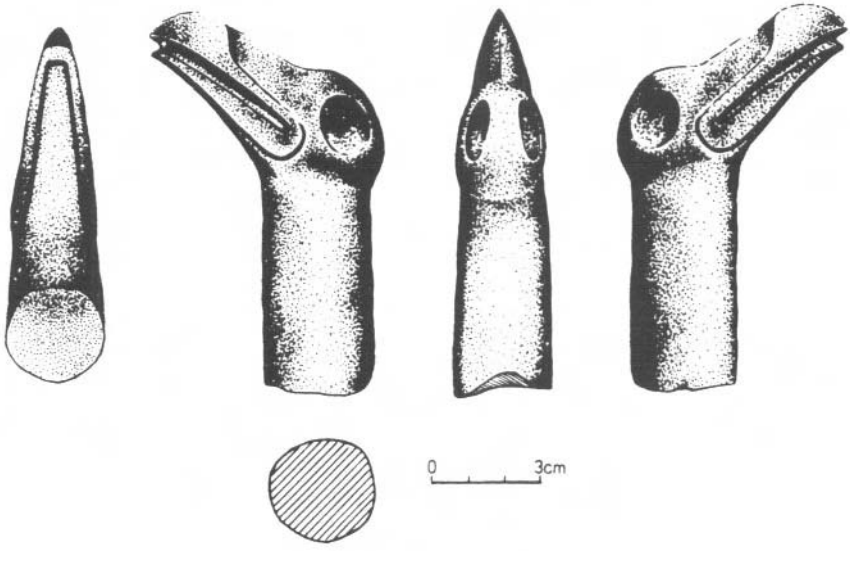


Fig. 4.8. Bird's head from Nemrik. Stone, PPNB. Iraq Museum, Baghdad. H. 10.4 cm. Courtesy John Fuller, Cambridge, UK.

the choice of one over the other probably has no specific significance in animal art, nor any link with the skill of the craftsmen. Both styles are attested together within the same period or the same cultural group. This opposition is clear among Halafian animal art: baked clay figurines are always schematic (we recognize quadrupeds, sheep or oxen), while ceramic paintings are often realistic (bucrania, equids, bovines). This opposition is not peculiar to prehistoric periods. Examples include the sensitively modeled head of a lioness from Dur-Kurigalzu (Strommenger and Hirmer 1964: fig. 171), the dog of Gula, and coiled snakes on the *kudurrus*, which are placed side by side with undetailed scorpions or childish drawings of fish. Realism, as well as full profile or full face representation, is used when an unequivocal depiction is required.

This distinction between stylistic and realistic rendering is also apparent between the depiction in prehistoric times of humans, who were always stylized since their identification is unequivocal and does not require more detail, and animal art, which is more often much more sophisticated. These animal depictions, even the most realistic, follow iconographic rules noticable in each prehistoric culture. Outlines stand out of the ground, most of the time free of any other motif, while bodies are reduced to their most characteristic elements, enlarged or distorted (fig. 4.9). On this kind of document, belonging to the most ancient periods, anatomic details or muscles are never shown. Animals are reduced to their shape and are uniformly colored, or limited to their outlines. With the exception of equids, which are depicted with manes, and bulls, which are depicted with horns, it is hard to identify species. We can merely recognize general characteristics (quadrupeds for instance) and nothing helps us to separate domestic and wild animals among a given category. The so-called onagers from Umm Dabaghiyeh's wall paintings are identified as equids more by the discovery of hunted onagers' skeletons in the vicinity of the site than by the anatomic detail of the renderings, their possible ears the only element that permits interpretation (Kirkbride 1982: 20, fig. 8). The ears however, could be horns and the onagers could be oxen.

This convention, found throughout the Near East, is common to all prehistoric groups for whom art is not naturalistic or narrative but symbolic. Such an artistic universal is well-illustrated by phenomena like Ninivite V Ware or Scarlet Ware (Delougaz 1952). General style is of course unique to these cultures, but ancient artistic

Fig. 4.9. Bowl from Samarra decorated with stags with distorted antlers. Vorderasiatisches Museum, Berlin. After Hertzfelt (1930: Taf. XI).

traditions are maintained, even after urbanization. For example goats, superimposed animals of different sizes, and fish and birds are treated according to prehistoric conventions, without trying to depict what is perceived by the eye.

SYMBOLIC VALUE

People from archaic periods perceived their environment as organized into a hierarchy, at least with respect to the natural elements of earth, water, and sky, and assigned specific animals an important role in their symbolic perception of the natural world based on this hierarchy. For instance, when animals are connected with gods, their status is directly tied to the cosmic hierarchy. Kassite *kudurrus* give

the best illustration of this point (Amiet 1977: fig. 519). The role played by the bull and the lion is without contest: they both occupy the highest place. This fact may be connected to their natural characteristics like strength or vigor, as well as to their bellowing and roaring, which evoke thunder. But this is not enough to explain their numerous depictions: artistic conventions do not refer simply to animals themselves, or to the human prevailing over natural order, or even to natural values carried by animals that could be taken over by man. They seem to refer to general concepts as well, such as the opposition between nature and culture, or untamed and civilized. But this opposition is not sufficient to explain the numerous animal depictions in Mesopotamia, as most of them have a more complex meaning. For one thing, some of the animals depicted are wild but not dangerous (birds, fish), while some of them are both wild and dangerous (scorpion, snake), but are not depicted with respect to their relationship with man, i.e., the hypothetical danger is without salience.

What animal art probably expresses in Mesopotamia from the Neolithic through at least the end of the Sumerian period is a symbolic perception of the world, a perception whose traces are visible throughout Mesopotamian history. The very meaning of these early representations is debatable and controversies are numerous (Forest 1993; Cauvin 1994). For some scholars, these animal depictions should be considered the first appearance of divinities. It is easy to imagine that prehistoric man might have wanted to take over the skills personified by the animals depicted in the art through magical practices, but there is no evidence that we are dealing with the beginnings of a theriomorphic religion.

Two opposing principles were represented in Mesopotamian art: a male one, depicted as a whole bull or as part of it (horns with or without the head), and a female one, often realistic figurines. The male concept is the simplest: the link with the bull seems clear, chosen for his virility, strength, and power. This animal acts as a symbol throughout the evolution of Mesopotamian art: horns, arranged by pairs, are linked to important figures, either gods themselves or deified kings. The female principle is more complex: as life is given directly by woman, she is at the center of a complex symbolism involving the union of opposing forces in relation with a cyclical natural process which is not properly a Mesopotamian idea.

It is no longer satisfactory to explain the numerous bucrania depicted on Halafian ware as a function of the recent domestication of

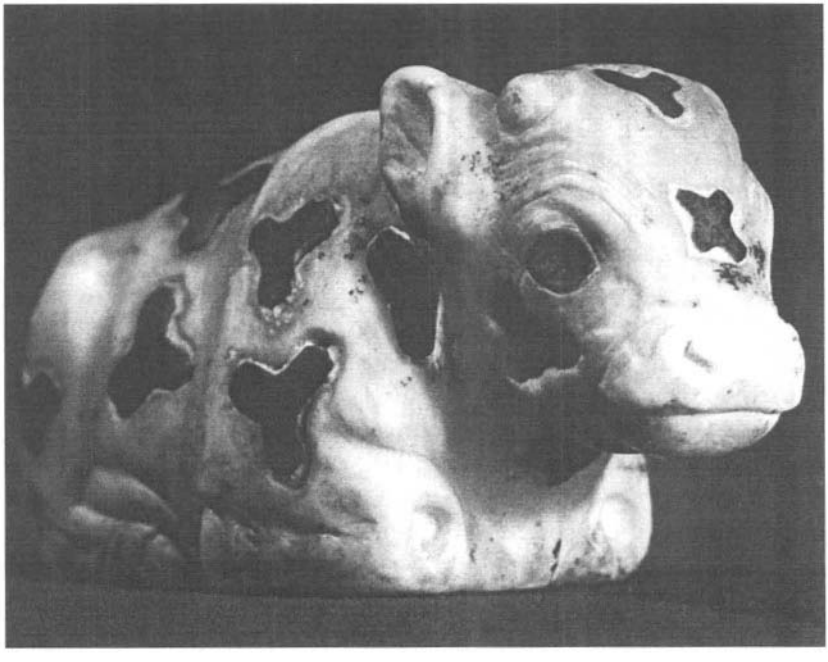


Fig. 4.10. Amulet from the *Sammelfund*, Uruk. Calf carved in the round, marble and lapis lazuli. H. 2.6 cm. Photo courtesy Vorderasiatisches Museum, Berlin.

bovines. Nor is it adequate to maintain that herds of bovines or flocks of sheep on Urukian glyptic are sacred possessions of the temples and recall Inanna's cult as well as the wealth of the southern cities. Nothing in all these depictions, even in the most complex scenes, evokes a reality (e.g. landscape or other additional elements) that would support such an interpretation.

Undoubtedly, the most suggestive scenes belong to the Uruk period: cattle, male or female, are depicted in close association with a building (mud hut or enclosure), interpreted as a cowshed (fig. 4.3). The youngest animals are shown exiting the building, suggesting that this scene is symbolic of birth (Delougaz 1960: 91). This interpretation is supported by Urukian objects carved in the round depicting, very realistically, bull calves with starry foreheads, sometimes crowned by their forming horns (fig. 4.10).[2] In this case, realism is desired by

[2] The marked preference for horned animals with a starry spot on their foreheads could perhaps be explained by the similarity of the horn with the crescent moon and of the star shape with the sun.

the artists in order to emphasize the young age of the animals and thus give the clearest possible meaning to the image.

The king-priest himself is associated with such symbolism. He is often depicted in glyptic feeding animals (sheep or cattle) with ears or branches (fig. 4.3b), or fighting against felines. The texts, using the parable of the good shepherd in referring to the king (Ryder 1993: 14), provides indirect evidence that these scenes should be interpreted on a different level. Here animals are symbolic representatives of the humans under the protection of the king, or of hostile forces (felines). The only individual depicted as a human being is the king.

In Sumerian art, young bulls' heads are used as wall or harp ornaments (Strommenger and Hirmer 1964: pl. 77; Braun-Holzinger 1984: Taf. 17) or in heraldic compositions often depicted in glyptic. A man (always undetailed, neither king nor genius) fights with a lion that swoops down on a bull. The aesthetic value of such scenes is often high, as their composition can be linear, crossed or twirled. Some show animals standing on their hind legs like humans (Amiet 1980a: nos. 851–961 [Fara style]). Most scholars try to explain these scenes by suggesting that artists want to express something other than nature (Amiet 1956: 113), but perhaps they should be understood instead as a stylistic arrangement of an old theme derived from prehistoric hunting where the human and animal figures are equivalent.

From these few examples, it seems that Mesopotamian archaic art is wholly metaphoric and refers to general notions like order, fertility, prosperity, abundance, and birth, which are central to the interests of all prehistoric societies. If we interpret Mesopotamian art without such symbolism in mind, it often appears ambiguous.

All animal depictions, regardless of species, may have multiple levels of meaning, either because our own cultural context distorts our perception, or because the meaning of animal art changes through the ages. The general background and the basis of interpretation given above (hierarchical organization of the natural world, association between animals and concepts) nevertheless make a complete reading possible. Bovines depicted in Mesopotamian art could be young calves or pregnant cows, that is to say pacific animals. Or they could be terrifying aurochs with impressive horns that fight the king himself (Amiet 1980a: GMA 1614; compare also GMA 602 to 612), thus evoking two aspects, the unsubjugated world and the tamed one belonging to man. With the exception of calves, these depictions are

identical from an artistic point of view: nothing helps us separate wild and domestic animals. The sense is given by the other protagonists in the scene.

The lion, which, with the bull, is the supreme animal, is closely related to royal power: it decorates the mace head of Mesilim, for example. However the king could also fight lions, as on the stele from Uruk, which is one of the most ancient examples of a royal hunt. Its ambiguous connection to royal power aside (lion hunt scenes are a metaphor for the conflict of two kings), the lion is one of the most redoubtable animals and is invested with multiple symbolic levels. As the supreme animal, it is supposed, for instance, to sleep awake (Cassin 1987: 168). Hence, it was chosen by Mesopotamians to guard the doors of sanctuaries. The most important part of our documentation belongs to the second millennium B.C. (Mari, Tell Harmal, Haradum), but this peculiar use of lion representations is attested earlier in history. Lion heads decorate the temple from El Ubaid and probably also the one of Ningirsu at Lagash, but the clearest example in stone comes from Enki's temple at Eridu. This statue is only one of two pieces that originally flanked the door (Lloyd, Safar and Ali Mustafa 1981: 242–45). The lions are in baked clay, modeled or molded in the round, almost life size, alternatively male and female, one on each side of the temple's entrance (Huot 1994). Their attitude is both static and active, realistic and almost grotesque (fig. 4.11). They are sitting, but their backs are in a vertical position. Often depicted roaring, showing its fangs, with a flashing mane and a starry tuft on the shoulders, its face has nothing to do with the natural physiognomy of the animal. The concept evoked by the depiction does not need anatomical accuracy. These sculptures, whatever their artistic level, were invested with magical life. The only guardian lions that are rendered differently are those from Dagan's temple at Mari. They are reduced to their foreparts, and seem ready to pounce. The material used in this case is also different: bronze leaves (now oxidized), over a wooden core. This technical characteristic should endow these objects with a shining aspect, emphasizing their terrifying behavior and their close relationship to the divine sphere. The use of a bone pin, suggesting fangs, completes the frightening depiction of the animals (Beyer *et al.* 1993), and suggests their role as apotropaia.

The snake, as well as other animals related to water and earth, seems to be linked with fertility through the flowing water metaphor

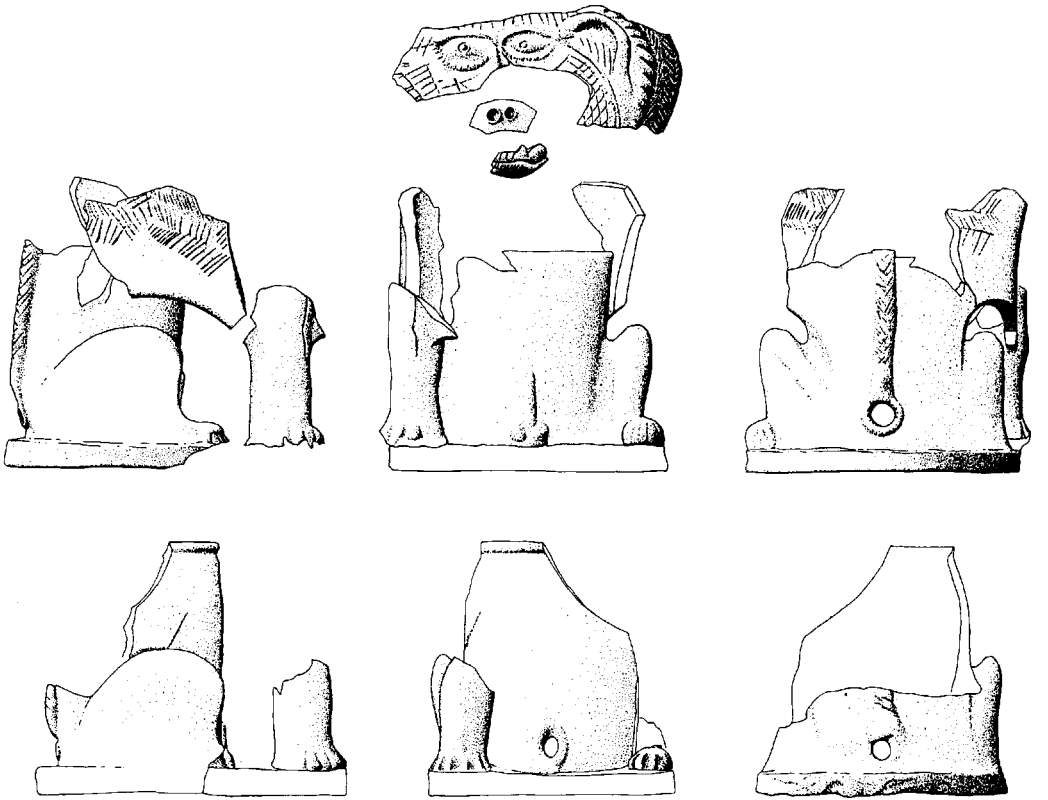


Fig. 4.11. Two lions from Haradum, 18th century. Baked clay (modeled and molded). H. ca. 60 cm. After Kepinski-Lecomte (1992: figs. 152, 153).

Fig. 4.12. Ophidian figurine from Tell el'Oueili, Ubaid 4. Baked clay. H. 16.5 cm. Iraq Museum, Baghdad. Photo courtesy J.-L. Huot, Délégation Archéologique Française en Iraq.

and its use on votive lamps or cultic vases like that of Ištar from Larsa (Amiet 1977: figs. 58, 402). Ophidophobia is probably a very recent development in comparison with the history of Mesopotamia. Most scholars emphasize the funerary aspect of many animal depictions (for instance Chaix 1984: 33), especially ones of snakes or birds of prey. A good example of this is the ophidian figurines belonging to the Ubaid culture (fig. 4.12), most of which were found in graves. Very slender compared to their Halafian sisters, their heads evoke that of a snake. The whole figurine (not merely the head) recalls the snake's outline, with a slim body, enlarged shoulders like the dilated neck of the cobra, painted spots or clay *pastilles* like scales. This could be explained by the fact that the dead are connected to the underground world, the one of springing waters, inhabited by reptiles and water animals. Cyclical perception of time allows the dead to play an active role in the life of living: they could bring fertility through nature's revival (Miroschedji 1981: 16). This peculiar aspect of animal depictions is also found with the theriomorphic vessels, cow or bird-shaped, that are often associated with graves (Forest 1996: 199 fig. 134).

After the Sumerian period, our documentation changes with the appearance of new objects such as terracotta plaques, *kudurrus*, and duck weights. The symbolism may not be different, but it seems more developed in response to a greater structuring of divine beliefs (the emergence of myths), a greater individualization of gods, their protective role, and their place in the cosmic order. Since the Sumerian period, gods are associated with animals that serve as pedestals or stands for them. The concept of "stand" can be misleading since the god never violently controls the animal (Ištar does not bring down the lion or Inshushinak the snake). In iconography, the animal is closely related to the god and acts as his substitute. Its physiognomy and behavior are also those of the god: the lion is related to Ishtar, the bull to Adad, the dragon to Marduk. In this relationship, the animal is much more than an accessory. The animal does not enable the illiterate to interpret the portrayals (Collon 1984: 83), but merely renders the reading unequivocal and is a part of the essence of the deity.

Marduk is the clearest example of a god associated with a monster (dragon), although composite animals have been depicted since the Sumerian period. The lion-headed bird is associated with Ningirsu on the Vulture stele, but can also evoke merely the concept of

a divine being (Eliade 1980). This creature manipulates opposing, and probably insubordinate, forces, depicted as lions, stags, or aurochs in confrontation or back to back, by connecting them, as on the bronze lintel from El Ubaid (fig. 4.4), or on the silver vase of Entemena (Amiet 1980b: no. 335). This peculiar composition could be derived from the ancient "master of animals" who holds animals without knotting them together. Winged monsters also appeared during the third millennium. Like Marduk's dragon, clearly depicted on Neo-Babylonian glazed bricks, these early examples comprise different components, recalling great animal categories: the bull's horns, the snake's body, the bird's claws and wings, the lion's limbs (on Gudea's libation vase for instance [Amiet 1977: fig. 399]). Most of them appear harnessed and are probably to be linked symbolically to the trend toward the deification of kings. But one of their most important roles, or at least the best-documented, was to guard thresholds.

NEO-ASSYRIAN ART

The greatest quantity of animal depictions belongs to the Neo-Assyrian period. Assyrian art is primarily concerned with royal propaganda, where animals played a specific role. Generally speaking, this art is closely related to a change in artistic media. During the Assyrian period, artists and architects made liberal use of stone orthostats in such official buildings as palaces. On these orthostats, a large scale iconographic program was developed. Numerous craftsmen were involved in the creative process. All of them used old artistic stereotypes like the harnessed equids, the lion with reversed head and the line of goats, renewing the compositions and employing writing differently.

For the first time in Mesopotamian history, art becomes wholly narrative. Relief is always low on these stone slabs, not far from drawing. Exceptionally, perspective is suggested, but details are numerous. Forgetting the resorting to stereotypes and the peculiar *raison d'être* of these depictions, Assyrian art could almost fall in the range of naturalistic art. But all the depictions, human as well as animal, play an obvious role in royal propaganda. Scenes where the king receives tribute from his vassals in the form of horses (the Palace of Sargon [Amiet 1977: fig. 611]), or in which he attacks enemy cita-

dels with the inevitable lines of deportees carrying their few possessions and accompanied by their families and starving cattle (the Palace of Assurbanipal [Amiet 1977: fig. 636]), serve to emphasize the king's victorious military campaigns. Royal hunts are also depicted for the same purpose. Hunt scenes depict the king surprising birds or equids in the steppe (Caubet 1993: 21, fig. 19 [Palace of Sargon]; Amiet 1977: fig. 621 [Palace of Assurbanipal]). Prestege hunts, almost ritualized, show him fighting aurochs and lions with his bow and spear or bare hands (Strommenger and Hirmer 1964, figs. 202, 203 [Palace of Assurnasirpal]; Amiet 1977: fig. 129 [Palace of Assurbanipal]).

Assyrian art presents no ambiguity: Animals represent themselves. Sea or marsh animals show how hard the battle against the Chaldeans was in such a setting. The elegance of Medean horses with their sophisticated harnessing show the worth of the booty. The lion's suffering, depicted as arrested in its running by the royal arrow, paralyzed or dying, contrasts with the impassiveness of the king. For the first time in Mesopotamian art, action is cut into sequences as in modern comic strips. For the first time, snapshots prevail over stereotypes. However, in order to bring more animation or life, artists manipulated conventional artistic arrangements: the open paw showing the lion's claws, which is a stereotype, is used both when the lion is fighting the king and when the lion is dead (Deshayes 1969: 386).

This peculiar care in depicting details, even if the details have no link with reality (for instance the aesthetic drawings of muscle structures) is new and reaches its highest point with Assurbanipal's sculptors. It affects the animals casually slaughtered by the king as well as the Israelite prisoners sent to Assyria (Caubet 1993: 24). It is hard to know if these scenes express a new mindset or if artists were expressing compassion. All of the Assyrian craftsmen are anonymous, but were brought, against their wishes, from each subjugated province of the empire. This fact could explain the vivid expression of realism found in these reliefs. Perhaps their only feeling was the observation of a violent reality (the one they lived), which they then tried to express as vividly as possible.

Besides resorting to numerous but cleverly used stereotypes, Assyrian sculptors seem to have had direct knowledge of their subjects. The Black Obelisk of Shalmaneser provides us with indirect evidence (fig. 4.13). Distant provinces bring their booty to the Assyrian king. This includes exotic animals such as camels, monkeys, and rhinoc-

Fig. 4.13. Detail of exotic animals from Black Obelisk of Shalmaneser. Diorite. Courtesy of the Trustees of the British Museum, London.

eri. These animals are unusual in Mesopotamia. No artistic stereotype depicts them. Artists caught sight of them at a specific event. The image they tried to reconstruct from memory is far from nature, as these animals appear as more monstrous than natural. All these exotic animals were probably kept in the zoological parks so typical of Assyria. Such parks complemented by gardens are often depicted on Assyrian reliefs (Strommenger and Hirmer 1964: fig. 245) and described in texts. They fulfilled a clear propagandistic function, proving that the empire was able to sublimate and integrate into its own schemes not only human beings but also plants and animals, starting with the most prestigious of all, the lion, clearly the equivalent of the king. The world, finally controlled, bowed to Assyrian order.

It is difficult to imagine these reliefs enhanced with bright colors, although all of them were originally painted, contributing to the efficiency of the message. Wall paintings from Til-Barsip using the same subjects (Caubet 1993: 27), and glazed bricks or painted framings from Khorsabad give us an idea of the original impact of the decoration when painted.

CONCLUSION

It is difficult to give a perfect summary of animal art in Mesopotamia over several millennia, although general phases can be observed. With the exception of Assyrian art, Mesopotamian animal art is not truly narrative. Artists did not try to depict animals for decorative or naturalistic purposes. On the contrary, they chose a few species and depicted them with special care, emphasizing the horns of bulls, caprids or cervids, the terrifying roar of lions, the link between reptiles and the earth. This choice of representations over at least six millennia tells us that animal art must be studied according to other parameters. All the depictions studied above, from the simplest to the most intricate, fulfill the same aim. By depicting animals in their most salient attitudes, by using stereotypes, by linking these depictions with other figures, and finally, by using captions, craftsmen tried, through art, to reduce the various components of the world to a single concept. This phenomenon was probably subconscious on their part as art and artists belong to the same social construction. From this point of view, realism could be considered as a step in a long line of others (the latest being the use of writing), to narrative art. These animal depictions, reused later, even after Alexander's conquest, among other artistic stereotypes, underline for us the importance of the role of images in the ancient world.

CHAPTER FIVE

ANIMALS IN THE ART OF ANCIENT IRAN

MARGARET COOL ROOT

PARAMETERS OF INQUIRY

Animal imagery is pervasive and dynamic in the art of ancient Iran; but there is no book-length study of the subject. This is a real gap in scholarship, perhaps best explained as a reflection of features that frustrate analysis of ancient Iran as a discrete entity. Because of Iran's geographic position between western and central Asia, it has been open to trade contacts and sweeping cultural interactions since remote antiquity. Furthermore, at certain periods in the history of Iran, its artistic traditions were closely related to those of neighboring Mesopotamia. Thus Iranian material is often folded into analyses of "greater Mesopotamian" civilization, with the obvious result that emphasis is placed on shared concepts rather than upon anything that might be teased out as distinctively Iranian. Although not specifically focusing on animals and needing an update in evidence and methodology, Porada's survey of the art of Iran as a phenomenon separate from that of Mesopotamia remains a useful resource. Furthermore, it does include penetrating descriptive observations on animal art (Porada 1965).

When we look closely we find that there are, indeed, distinctive characteristics in Iranian traditions. In fact, despite close ties with Mesopotamia, there is one overarching theme that imposes a remarkable hallmark unity upon ancient Iranian creativity in the visual arts. It is a veritable reveling in the decorative potentials of animal forms and the richly textured valences of their symbolism. This hallmark is discernable across a multiplicity of media and across arts made for official court consumption as well as private use in various social and regional contexts. The key to any attempt to define a pervasive "folk" art of ancient Iran may well be in the realm of animal imagery and style (as per Moorey 1985).

In an effort to move toward a blueprint for an eventual larger scale study of animal art in ancient Iran, we will focus here primarily on

case studies in animal imagery which, while they may in some instances initially share a common ancestry with Mesopotamian themes, then proceed along tellingly divergent trajectories. Our survey will move very selectively back and forth from the late prehistoric era, ca. 4500 B.C., through the Achaemenid Persian empire (550–330 B.C.). I will not address archaeological problems of relative and absolute chronologies for the early phases. Henceforth all dates will be B.C. unless otherwise noted.

During the Achaemenid empire, southwestern Iran was the center of a vast hegemonic sphere stretching from Egypt to the Indus River. The heartland region became the new home of the Indo-Iranian Persians who had pushed gradually westward until roughly the end of the second millennium. They brought a new cultural dynamic to bear upon ancient traditions in the visual arts. The Persian empire gives us an opportunity to examine how certain animal themes deeply rooted in the very ancient ethos of the land were given new life (or, in one case, systematically rejected) by a powerful social order with specific political/cultural agendas. Thus, our case studies will not only be selected for having some trajectory that is distinct from Mesopotamian tradition; they will also be selected for their service as animal types and themes of representation that begin in the pre- or proto-historic period and have interesting histories of some paradigmatic significance in Iran during the Achaemenid empire. The two exceptions to this will be the camel and the horse. These animals do not enter the repertoire in prehistory; but they were so important to the lifestyle of ancient Iran by the historic periods that it would be precious to ignore them.

The dual strategy of selection outlined here is meant to demonstrate within limited space a set of aesthetic and symbolic driving forces behind animal representation in ancient Iran—driving forces that emerge early, gather some particular potency, and ultimately then find some demonstrably fresh resonance in the final stage of Iranian civilization before the conquest of western Asia by Alexander of Macedon. This chronological end point for our survey is in many ways artificial in terms of the artistic record in Iran, as scholarship both art historical and textual has shown (Root 1994; Dalley, 1998; Wiesehöfer 1996). It is maintained here for practical reasons. In a different situation the study could, however, legitimately span all of antiquity to the Islamic conquests of the seventh century A.D. and from there offer salient perspectives on continuities of certain fea-

tures of animal representations in the courtly and folk arts of medieval, early modern, and modern Iran.

I will focus on mammals, with the exception of the snake, whose story is simply too intriguing to dismiss. The subject of birds offers material of symbolic importance that we can only touch upon in passing here but which could form the basis of a parallel analysis. Generally, representations of birds, fish, reptiles, and insects seem closely related to Mesopotamian traditions, with some twists of meaning and relative quantitative prevalence. The cock and the honeybee are two interesting exceptions that seem to have been particularly Iranian (Moorey 1978: 150–51). Finally, I will not attempt systematically to interpret the menagerie of fantastic hybrid animal creatures, which was a major part of the Iranian tradition. Rigorous explorations of specific types of composite creatures have primarily been tackled to date by specialists focusing on the civilizations of Mesopotamia (e.g., Green 1986, with comprehensive references to earlier literature). Such efforts have tended to deal with religious/magical meanings as these may be documented through artistic representations illustrative of the rich and contemporaneous textual documentation available for ancient Mesopotamia. Different approaches will be needed for the Iranian material. To a great degree, the analysis here will be embedded in the world of observable animal life, with the understanding that there is a closely related imaginary realm of composite animal creatures the study of which must develop in tandem with efforts to clarify the uses and meanings of representations of actual animals in the art of ancient Iran.

I will highlight excavated or at least provenanced and demonstrably genuine material. This is a worthwhile challenge. Much of the portable art of ancient Iran has been looted from sites and dispersed on the art market with even the location of the find being intentionally obfuscated. This situation destroys any context that would enable us to move beyond descriptive inventory in order to tackle issues of social significance. Furthermore, many categories of Iranian artifacts (especially zoomorphic bronzes looted from Luristan in western Iran) have become favorite subjects in forgers' studios (Muscarella 1977). This means that any attempt to characterize the relative prevalence of a particular animal motif using such classes of artifacts uncritically is a meaningless exercise. In order to meet the challenge, some of the objects typically illustrated in handbooks as reference points for specific concepts will not appear here. In com-

pensation, some newly accessible material never before published as well as some artifacts that are less commonly treated but extremely interesting will come to the fore alongside some classics. Because sites in western Iran have been more intensively explored archaeologically than those in the east, material presented here will perforce reflect that bias.

THE LAND-ANIMAL-HUMAN CONNECTION

Iran as its modern borders describe it is a large country of diverse climates, terrains, and fauna. It is situated between the temperate zone of the Caspian Sea, with lush vegetation and abundant rainfall, and the sub-tropical region of the Persian Gulf. Vast expanses of salt desert stretch across the center of the country. High mountain ranges and steppes create striking contrasts in the landscape, while grassy foothills and well-watered and irrigated plains provide good grazing and floral abundance in season. The mammals native to Iran are many and extremely varied (Harrington 1977). They were much more abundant and varied in the past. Some animals of extraordinary importance in ancient Iranian art, such as the Persian lion (*Panthera leo persica*), were once major features of the faunal record there but are now extinct. The last recorded sighting of the lion in Iran was in 1942 according to one source (Harrington 1977: 72), although there are reports of a dead one seen in 1962.

Iran was also a land of culturally diverse peoples. We cannot treat the study of animals in Iranian art without attention to some of the changes in symbolic associations of specific animals due to the impact of shifting ethnic and religious influences within the Iranian region and shifting economic/political relationships involving cultures further afield. In antiquity, as even to the present day, Iran embraced a fluctuating mix of sedentary populations, semi-sedentary/pastoralist populations, and nomadic tribes. The intensity and quality of nomadism and its interdependence with settled populations was not a fixed situation. It was variable; and its fluctuations at certain points may bear upon issues of animal art in ways we have yet to understand (as possibly with the camel). The human engagement with animals (and the larger ecosystems of which they were a part) determined the ways in which artistic traditions resonated with them. Thus it is important to acknowledge the range of human

communities in this milieu, with their fluid admixtures of population groups many of which remained closely tied economically and symbolically to the habits and demands of the animal world (Zeder 1991).

Animals appear already in the earliest representational modes of pre- and proto-historical settings in several capacities:

1. As vehicles for experimentation with abstraction and decorative compositional dynamic.
2. As figures in cosmic contests and "performances."
3. As figures/symbols in emblematic or narrative portrayals of human experience.
4. As figures/symbols in emblematic or narrative portrayals of the animal world.
5. As players in specific rituals of human society.
6. As signifiers of specific political/social ideas of human society.

These categories are by no means mutually exclusive. They work together diachronically as well as synchronically to offer a set of guideposts for our investigation.

SNAKES

In late pre-historic times (around the mid-fifth millennium and somewhat later), representations of animals are particularly noteworthy on stamp seals and painted pottery. Serpent imagery is prominent, for instance, at Susa in the southwest and Tepe Giyan in the northwest.[1]

Pre-historic seals frequently show the snake either as an isolated figure or an entwined pair writhing in the design-field (fig. 5.1a), as

[1] Susa has been excavated almost continuously since the late nineteenth century of our era. Although the early work left much to be desired in terms of field strategy and recording, the site is of critical importance (viz., citations under André-Salvini 1992; Aruz, Hole, and Tallon 1992; Amiet 1972; 1980a). Subject to clandestine pilfering already for many years, Tepe Giyan was initially investigated by Ernst Herzfeld, a pioneering Orientalist and archaeologist of the early twentieth century. He collected a large group of stamp seals there, which he presented in seminal iconographical discussions of the pre-historic stamp seals of Iran (Herzfeld 1933; 1941: 11–75). Unfortunately he did not also publish an account of the archaeological contexts whence he retrieved the artifacts. Be that as it may, the seals were definitely collected at that site. The Tepe Giyan seals illustrated here all derive from the segment of Herzfeld's collection that is now housed in the Kelsey Museum of Archaeology, University of Michigan (Root 2000).

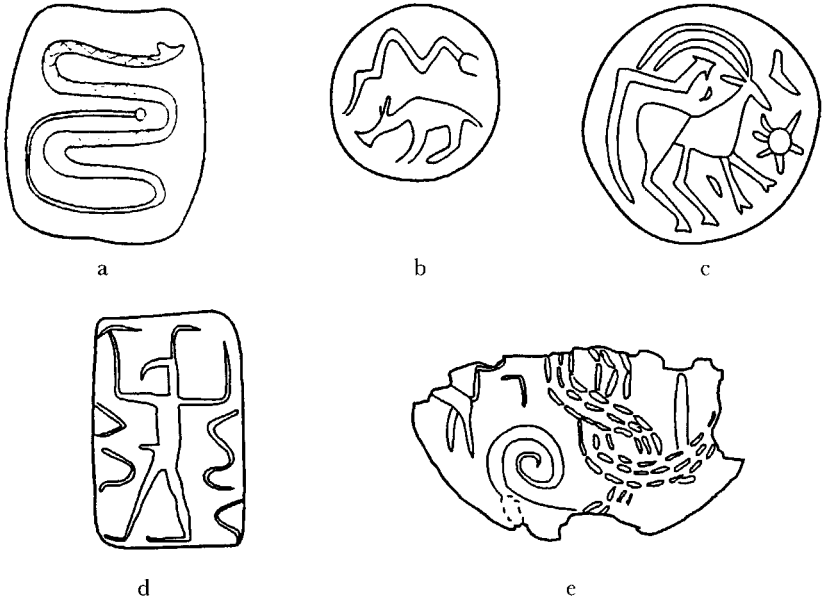


Fig. 5.1. Drawings of modern impressions of stamp seals from Tepe Giyan: a) Kelsey Museum 91.3.99; b) Kelsey Museum 91.3.8; c) Kelsey Museum 91.3.158; d) Kelsey Museum 91.3.104; e) Kelsey Museum 91.3.95. Scale 1:1.

one figure in an animal grouping (fig. 5.1b, c), or as part of a composition in which a "hero" figure grasps or masters it (fig. 5.1d; see also Amiet 1980a: *passim*, for easily accessible drawings of many of these seal types). Much less common is the motif of a snake devouring human or animal prey; but when this theme does occur, it is rendered with gusto. A fragmentary seal from Tepe Giyan preserves part of such a scene, apparently involving two great scalely serpents (fig. 5.1e). A similarly (indeed disconcertingly) robust pair appears on a contemporary seal from Tepe Gawra in Mesopotamia. Here the intertwined creatures are poised to strike a rather desperate looking human figure (Amiet 1980a: pl. 2, no. 46; Caldwell 1976 on interconnections of Gawra and Giyan glyptic). Seals were used to impress images on clay for the labeling, locking, and accounting activities of an increasingly complex society. Efforts to understand how specific types of imagery on specific types of seals may have related to the administrative activities for which they were deployed is only now emerging. Clearly there were systems of message-conveyance and codes of allusion involved that, when more fully appreciated, will even increase the significance of these early glyptic

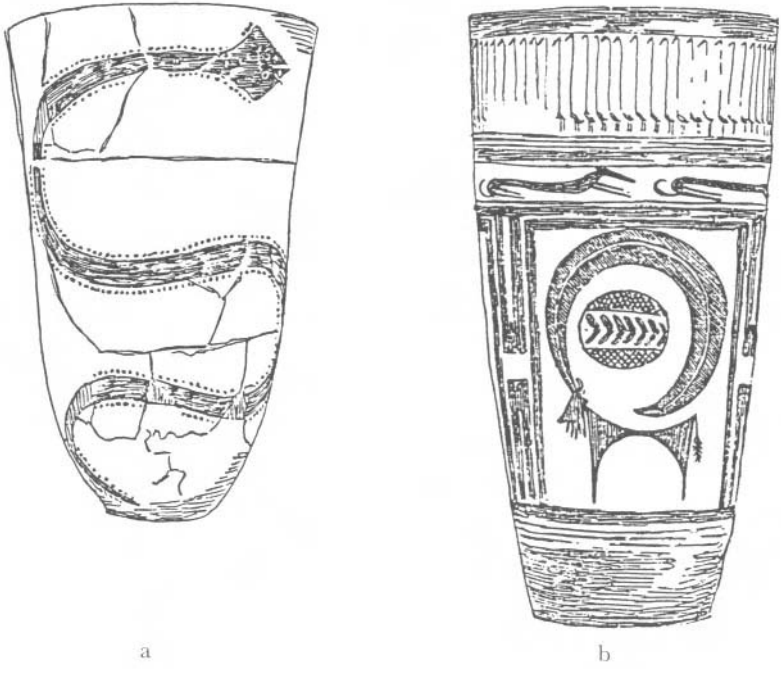


Fig. 5.2. Drawings of Beakers from Susa: a) Louvre Sb 3168. H. 30 cm. After Herzfeld (1941: fig. 109); b) Louvre Sb 3174. H. 28.9 cm. After Herzfeld (1941: fig. 86).

representations of animals (Rothman 1994 for interpretive analysis of seals bearing animal images as administrative tools via excavated seal impressions from Gawra; Ferioli *et al.* 1994 more broadly).

The dynamically writhing snake appears also on a remarkable thin-walled clay beaker from Susa (fig. 5.2a), which is one of several similarly decorated prestige or dedicatory pots associated with burials at this site (Hole 1992: 34–35, no. 3). Here, two snakes flank a stepped structure. Displayed in vivid side-winding locomotion, with small dots running up each side along their entire length (as if to reinforce the sense of movement) and with diamond-shaped heads poised for action, they command the convex surface of the vessel in a dramatic composition. This presentation defies the highly structured representational codes within which depictions of other animals are portrayed on pre-historic painted wares from the same cemetery (fig. 5.2b). Indeed it conveys a quasi-narrative aspect, as if depicting two male snakes rearing up for imminent mating-season battle (a common activity among vipers).

Based on their rendered attributes, these snakes have plausibly been identified as saw-scaled vipers native to the region—a species noted for its mode of maneuvering, its rasping sound produced as a defensive strategy, and its particularly toxic venom. The snake was certainly a symbol of lurking dangers. Perhaps the avidity with which these beings were depicted in early representational art was intended not merely to describe the danger but also in a sense to co-opt it. In addition to the literal association with toxic venom and its deadly effects, the snake was also a symbol more generally of chthonic forces—primal energies and resources emanating from the earth. In this capacity it surely had associations with the savagery of earthquakes unleashed from the depths in this part of the world. It may also have been associated already at this time with notions of the underworld (Van Buren 1934). Certainly by the time we can work with texts in association with snake imagery, there are hints in Iranian sources of royal invocations to a god directly associated with the snake and snake imagery who was protector of the earth; a god of subterranean waters and simultaneously the master of the earth (e.g., Miroschedji 1981; Malbran-Labat 1995: 59–61, 184, 190–192). The patron king himself, invoking the blessings of the snake god, acquired the patina of these same authorities in political as well as spiritual terms.

The paradoxical pairing of sinister with beneficent associations of a natural phenomenon is common in nature itself and in the belief systems humans develop about such a duality. In this aspect the snake is a significant paradigm for a feature of ambiguity latent in many uses of animal imagery in ancient Iran (Koch 1995: 1963). On the positive side of its ledger in nature, the snake was helpful to the farmer as a consumer of rodents and a tiller of the soil. In ancient Iran it had close symbolic associations with water and fire—both crucial commodities.

Although the snake also appears in Mesopotamian art, where it develops a symbolic relationship particularly to the god Ningishzida, serpent imagery becomes uniquely powerful in the art of Elam. The land and culture of Elam centered in southwestern Iran and encompassed the site of Susa as well as, e.g., another major urban site called Tepe Malyan (ancient Anshan). Valences of meaning apparent already in late pre-historic Iranian art become crystallized into an elaborate program of symbolism relating to the snake. Indeed, in the Elamite pantheon the divine essences and deities relat-

ing to the snake (especially the gods Inshushinak and Napirisha, the Great God) seem to demand symbolic portrayal in a complex referential system of attributes (Aruz 1992: 117–18). Although one notable form is also familiar from the greater Mesopotamian tradition (the throne seat in the form of a coiled snake), the programmatic insistence upon snake imagery is very distinctive. Furthermore, the serpent throne motif seems actually to have developed in Elam and thence to have been appropriated in neighboring Mesopotamia (Miroschedji 1981; Negahban 1991: 79).

The snake figured in a great array of Elamite artifacts down through the second millennium, ranging from elaborations on the early themes of snakes and animals on seals (Amiet 1980a: pl. 35, no. 548) to three-dimensional snakes of bronze deposited as ritual offerings (Amiet 1966: 384). It acquired a codified place in the iconography, where an important deity (or deities) associated with water and snakes held sway from a throne in the form of a coiled snake and frequently was depicted grasping snakes (or having snakes associated with part of the body) in a manner that expressed symbiosis of identities (a form of incorporation) rather than simplistic domination. Such images appeared on large stone cult images in the round (Amiet 1966: 379, 381, 382), monumental free-standing reliefs (Amiet 1966: 374–77; Aruz 1992: 127–31), and rock reliefs set in special places of worship in the countryside (Amiet 1966: 386–87 and 560–63). In some monuments, a formal conflation is expressed between writhing snake and flowing streams of waters. A bronze fountain-altar is more direct in its statement of cultic link; it depicts sculptured divinities holding vessels that would have overflowed with water while sculptured snakes stretch out, framed by the vessel-holders, so that they would have looked to be slithering in the actual running stream (Amiet 1966: 383).

One group of seals of the early second millennium depicts a ruler in the act of investing authority in a petitioning functionary by transferring to him an axe that is in the form of a serpent (the sidewinding horned snake, *Cerastes cornutus*), who appears to be devouring the blade (Amiet 1972: 210 and pl. 156, no. 1677; Aruz 1992: 106–7, fig. 34). Actual axes of this type are also documented from Iran (Amiet 1966: 407). The portrayals on seals enable us to understand that these snake axes held special significance within the hierarchy of Elam at this time. Evidence for Elamite art in the first millennium is meager generally due to political vicissitudes. Mate-

rial that emerges from outlying areas under the cultural influence of Elam suggests that the snake cult of Elam remained widespread even into areas of the northwest (Calmeyer 1995: 38 and fig. 14). The importance of the snake has recently been noted as a striking feature of Elamite civilization (Spycket 1995: 28–29).

The dominance of snake imagery in the cult life of ancient Elam raises an interesting issue. By the close of the second millennium, the Indo-Iranian Persians had reached what is now southwestern Iran and had established themselves in Elamite territory. Through processes of gradual assimilation and also self-conscious official appropriation, the Persians maintained and reworked numerous features of Elamite civilization (Potts 1999: 309–52). Strikingly, however, the symbolism of the snake in the visual arts seems neither to have been maintained during the Achaemenid empire in an unbroken continuity perpetuated by local individuals who remained faithful to Elamite chthonic cult, nor to have been revived by the Achaemenid kings as part of their program of systematic allusion to important religious and courtly imagery of the lands and kingdoms from which they created their universal hegemony (Root 1979: *passim*). The dearth of evidence suggesting either seamless perpetuation of the old chthonic imagery or conscious politically-inspired revival of it is particularly noteworthy since Elamite groups remained a strong segment of society in the southwestern Iranian home-base of the Achaemenid empire.

We are fortunate to have access to many insights about the people at work in and traveling through Persia (and the imagery they chose to identify with through their seals). A large archive of administrative documents, the Persepolis Fortification tablets, was excavated at the heartland capital of the Achaemenid empire and dates between 509 and 494 in the reign of Darius the Great (Hallock 1969; Garrison and Root 1996; 2000; in press a and b). These documents bear the impressions of seals belonging to individuals of varying status and ethnic identification. From a sample of approximately 1,170 discrete seals used multiply on 2,087 tablets (written in Elamite in cuneiform script) we can attest that Elamite personnel were serving in many capacities at this time (Koch 1977; 1991). But the ancient Elamite traditions of snake imagery are almost totally missing from this rich databank. Not even Elamite religious personnel are using seals with symbolic reference to the snake. Only one seal retrieved through impressions on the tablets suggests a link to Elamite tradi-

tion in this regard: PFS (Persepolis Fortification Seal) 418, which is used on Fortification tablet 110 (Garrison and Root 2000: Cat. No. 201; Hallock 1969: 107 for the text). This cylinder seal was not used by an identifiably Elamite individual; but it portrays a hero grasping two rearing snakes in a little-documented style apparently associated with Susa of immediately pre-Achaemenid Persian times. It compares well to an actual cylinder seal from Susa that has been so dated (Amiet 1972: 283, pl. 188, no. 2197). The only other seal documented through impressions on the Persepolis Fortification tablets in the Garrison and Root research corpus that deploys an incontrovertible allusion to the snake is a radically archaizing cylinder (Garrison and Root 2000: PFS 152 [Cat. No. 295]). This seal displays a self-conscious revival (a veritable spoof) of a third millennium Mesopotamian frontal hero figure with snakes draped over his bent arms. It is one of many examples in the Persepolis archive that demonstrate the great range of consciously reinvented archaic images at the disposal of seal carvers and their patrons during the Achaemenid empire. But it invokes a Mesopotamian stream of iconography, not the Elamite chthonic symbolism of deep cultic nuance associated with the snake. The difference would have been well-understood.

In sum, out of a wide-ranging corpus of ca. 1,170 distinct seals applied to documents in the Elamite language, some of which even relate to Elamite personnel and cult activities, only one seal invokes Elamite serpent imagery. The evidence suggests deliberate avoidance of this particular animal theme within the social milieu of the Persian court at Persepolis. From the Achaemenid royal site of Pasargadae in southwestern Iran, two silver bracelets terminating in snake heads have been excavated (Stronach 1978: 178, 210–11). This find might seem to create a problem for the theory of calculated avoidance of the snake image in heartland Iran under the Achaemenids. The context of these bracelets is, however, definitively dated to about 280 B.C., long after the end of the Achaemenid empire. Furthermore, the plain forms bear no sign of relating to Achaemenid technical and stylistic prototypes in precious jewelry. There seems to be no evidence for a tradition of snake-ornamented jewelry in Iran of the Achaemenid period.

What might be the cause of the virtual disappearance of the snake in heartland Persian art during the Achaemenid period? Although the Achaemenid Persians were known for their tolerance of different religious groups harbored within their multicultural hegemony,

it is possible that the snake was too potent a symbol of indigenous cult to have been encouraged to persist or to find new expressive modes in the service of the official imperial program of the Persian kings. The Achaemenid kings were early Zoroastrians in some sense perhaps best characterized as practicing "Mazdaism," the worship of the god Ahuramazda according to doctrines and liturgies not yet well understood by us (Sancisi-Weerdenburg 1995: 1041–42). Their primary god was Ahuramazda, a deity of light and truth. Reverence for light, fire, earth, and water were important features of developed Zoroastrian belief system and were certainly shared by the Achaemenids (Boyce 1992). According to the teachings of the Avesta, the snake was an incarnation of evil and was to be killed (Busch 1985: e.g. 73, 86, 391). Although it is not clear the extent to which the Achaemenid Persians adhered to these teachings as doctrines, it seems plausible that certain chthonic connotations of the snakes of Elam were anathema to the Achaemenids because they perhaps suggested to these Indo-Iranian people the forces of darkness, evil, and contamination of water and earth (see, e.g., Choksy 1989: 10–16). Perhaps also the old chthonic religion was simply too close to home to be encouraged by the new political order. The ancient indigenous religion, with its insistence on the snake symbolism that was so important to the worship of Napirisha and Inshushinak, may have posed a particular threat to the establishment of Mazdaism as a court cult in southwestern Iran.[2]

The story of the snake is unusual because it is the one place where we demonstrate a radical discontinuity in Iran with more ancient traditions of animal representation. Paradoxically, the virtual absence of the snake in the art of Achaemenid Iran suggests the extraordinary power of its meaning.

ANIMALS PLAYING HUMANS

A special theme introduced in proto-historic Elamite art is the depiction of animals in the roles of humans. In all cases, these are representations of fully animal forms, not humans wearing animal masks or even full skins. A cylinder seal impression applied onto a

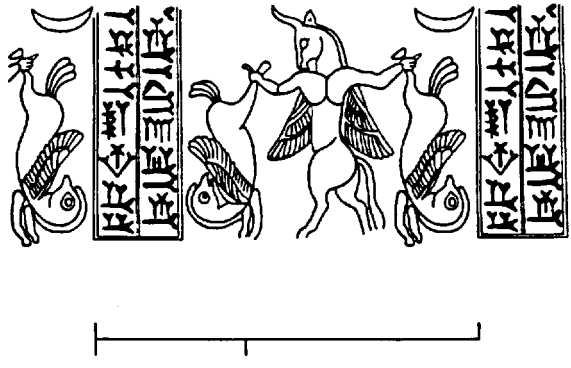
[2] Compare Koch (1995; 1963) for a different explanation for the demise of Inshushinak under the Achaemenids.

clay administrative document with a proto-Elamite inscription preserves a two-part image: a massive bull standing upright, with head and horns frontal, masters two séjant lions; while adjacent, the roles are reversed and a great lion standing upright masters two clearly subdued bulls. Additional examples depict animals as atlas figures supporting mountain emblems, as musicians, boaters, archers, and banqueters (Rutten 1938). In some instances these scenes seem frankly humorous (very much like similar portrayals in Egyptian art). In other cases they seem deeply imbued with spiritual force. There is room here for multiple valences of meaning.

What is particularly remarkable is that the classic style of Elamite glyptic art at this time devotes great attention to narrative contexts of representational imagery—but the human activity is almost always enacted by animals. These scenes seem to have developed during the proto-historic period in Elam. Only subsequently and to a far lesser extent do they appear in Mesopotamia. When this imagery does appear in Mesopotamia it may reflect a conscious allusion to the Elamites made on items of royal prestige specifically to suggest Mesopotamian dominance (Pittman 1997: 139). This scenario would reinforce the idea that the theme of animals performing the roles of humans in the visual arts was viewed as a quintessentially Elamite phenomenon in the greater Mesopotamian sphere.

One cylinder seal from Susa of the neo-Elamite period (in the early first millennium) depicts animal musicians and documents the maintenance of the theme in a quiet way within Elamite culture (Amiet 1966: 544). The material record of first millennium Elam is very poorly preserved compared to that of the third and second millennia. Assyrian annals describing the sack of Susa in the seventh century suggest that the problem lies in the retrieval rather than in a poverty of original situation. This lone seal may thus be an isolated vestige of a more pervasive revival or continuity of the proto-historic phenomenon.

During the reign of Darius I in the Achaemenid empire, a cylinder seal is in use on the Persepolis Fortification tablets by an important administrator at the court. This seal dramatically echoes the proto-Elamite imagery of massive leonine figures acting out the roles of humans in scenes of apparent cosmic nuance. Here, it is a winged bull creature who stands fully erect, human-style, grasping two winged creatures with its human hands (fig. 5.3a; Garrison and Root 2000: PFS 1* [Cat. No. 182]). There are other seals in the corpus



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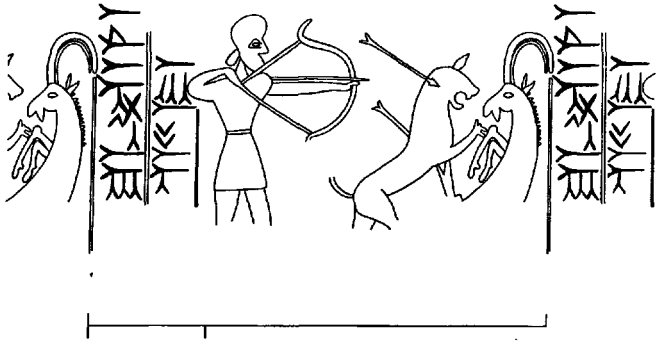

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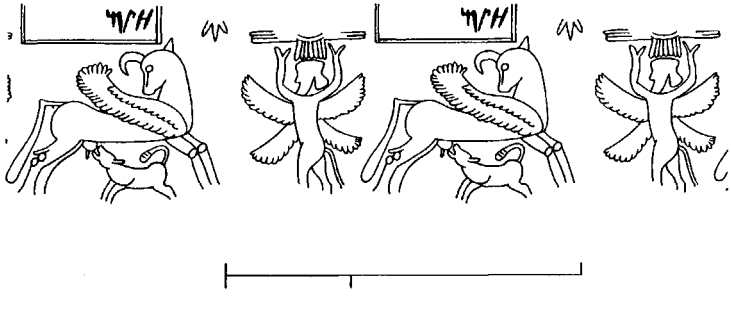

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Fig. 5.3. Composite drawings at ca. 2:1 of seals used on Persepolis Fortification tablets: a) PFS 1*; b) PFS 35*; c) PFS 83*. Scale bar indicates 1 cm.

that are reminiscent of the more humorous-seeming archaic examples. One shows an usher leading an erect and walking human-headed winged lion by the paw, while an erect ibex brings up the rear in a light-hearted gait (Garrison and Root in press a: PFS 46). This seal seems to be a parody of the solemn tribute procession reliefs decorating the Apadana audience hall at Persepolis, where the head of each foreign delegation is led by the hand toward the king, with others in the envoy following behind (Root 1979: 227–84, for the serious side of the Apadana imagery). These uses of animal motifs illustrate again the capacity in Iran for remotely ancient forms and symbols to emerge anew either through maintenance at a low level in the active repertoire or through conscious revival. They also indicate that animal imagery had an important social function as a parodic outlet.

SNAKES (AGAIN) AND HEROIC MASTERY

The pre-historic representations on stamp seals of heroic control of the snake initiate a long tradition in Iran (and adjacent Mesopotamia), a tradition in which a range of animals and fantastic creatures could perform as the controlled beings. The hero motif displays the subduing, harnessing, or incorporation of potentially threatening natural forces or of natural forces that must be controlled in order to serve the interests of human society. During the Achaemenid empire the theme of heroic encounter enjoys a remarkable revival in glyptic art, although avoiding the snake, as we have noted. In monumental sculpture heroes appear on the doorjambs of palaces at Persepolis stabbing a rearing lion, bull or fantastic creature as if to protect an inner chamber of the building from the approach of an invasive force (Root 1979: 300–308; Schmidt 1953: pls. 114–17). These representations are metaphorical and multivalent (see Garrison and Root 2000: Introduction). The lion and the bull, for instance, enjoyed a complex set of associations for the Achaemenid rulers. An animal like the bull could be stabbed on a doorjamb and reappear as a helpful essence in another architectural context within the same program (see below). In the art of seals, these heroic encounters of the Achaemenid period were not only layered with symbolic messages, they were also an important vehicle for experimentation in

craft workshops with animal forms and their fanciful decorative potentials.

The fact that the heroic control of snakes seems to be the most prevalent form of heroic encounter in pre-historic Iran is particularly intriguing because many (but not all) of these early snake-tamers are themselves depicted as part man and part wild goat, or ibex (Barnett 1966). They portray the hero as either an imaginary hybrid creature or a human figure wearing some sort of ritual gear including an ibex headdress with distinctive horns (fig. 5.1d). The ibex secretes a substance in its stomach that serves as an antidote to certain poisons. While it is not known how early an awareness of this existed, a name for the animal in Persian, *pād-zahr*, means essentially "counter-poison." In medieval and early modern times, the ibex was systematically utilized (to the point of near extinction in some areas) for production of antidotes (Porada 1990: 71–74). Possibly a primitive knowledge of its special properties caused a specifically ibex-headed "hero" to be deployed in art (and perhaps, with aid of a mask, in actualized rituals) as a symbol of control of the poisonous viper. According to one interpretation, seals with this motif were probably not used as actual administrative tools, but were reserved solely for use as amulets literally to ward off snakes (Porada 1995: 40–42). This suggestion seems unlikely in view of the fact that seal impressions bearing the imagery have been excavated at Susa. An alternative hypothesis proposes that such seals may have been used as the insignias of particularly powerful figures in the redistributive economies of their locales of origin—with the representation taking on a metaphorical valence (Wiggerman 1995: 87–90).

MORE ON THE IBEX AND ASSOCIATED ANIMALS

By either of the above interpretations, these early hero creatures with ibex attributes (often called shamans in the literature) suggest a deeply engrained notion of union between humankind and this particular horned animal. The ibex-horned heroes on these seals are most interesting in view of the fact that the ibex-as-animal was one of the most frequently occurring subjects of animal art in Iran beginning in the pre-historic era. The adult male of the species has distinctive long horns that grow in ringed annual increments and sweep back

from the face in a wide and breathtakingly graceful arc. Pre-historic Iranian pot painters sometimes reduced the entire animal to a pattern of horns swirling around the vessel. The ibex inhabited rocky mountains and was ubiquitous wherever this terrain occurred—from lofty snow-covered peaks to foothills, forests, and desert regions. Its adaptability to variant climate and foraging opportunities made it a shared aspect of the visible world across the entire Iranian landscape.

Representations of the ibex in the late pre-historic art of Iran display a love of pattern and a fascination with abstractions of acutely observed natural forms. A beaker from the Susa cemetery, dating to about 4000 B.C., exemplifies the phenomenon. It is the most beautiful example of a class of similarly decorated cups (Hole 1992: 32–33; Bagherzadeh *et al.* 1981: pl. 67). The composition of the ibex with its horns arcing around an emblem was echoed in medieval Iranian painted pottery, so much did it captivate the artistic imagination (e.g., Bagherzadeh *et al.*, 1981: color pl. 21). On the Susa beaker now in the Louvre, the main body of the vessel is marked off into two vertical panels. Each displays a schematically rendered male ibex whose exaggerated horns create an almost full circle enclosing a circular geometric emblem reminiscent of a contemporaneous geometric stamp seal device (fig. 5.2b). A calligraphically executed file of long-necked water-birds encircle the top of the vessel in a tall band; and a ring of elongated salukis (a breed of hunting dogs) crouch, poised to spring forward in the opposite direction, thus creating a vivid sense of imminent action.

The program of representation on this beaker uses animals to describe the diverse landscape in the region of Susa. The water-birds allude to marshland; the salukis to the lowlands; and the ibexes, as we have already mentioned, refer to the highlands.

Along with the ibex and closely associated with it in pre-historic art are various birds (including some with wide outspread wings, probably eagles or vultures), "comb-animals," which must be domesticated sheep rendered with a long comb-like fur fringe and a head at each end, boar, turtles, and scorpions (Hole 1992: 32–41). Domestication of sheep, goats, cattle, and pigs for their produce values had been an ongoing process for millennia by the time of these representations (Zeder 1991; Maisels 1993). Furthermore, the very nature of the artworks themselves betrays an increasingly complex social environment suggesting craft specialization and investment in

aesthetically refined production (the painted pottery particularly) and a highly differentiated administrative apparatus (the seals). It is thus of great interest that the repertoire of animal representations at this time seems fairly limited compared to the spectrum of animal life we know (from studies of faunal remains in excavations) to have existed at analogous sites in Iran and neighboring Iraq.

Although a fairly small number of different types of animals tend to be used relative to the plethora of species evidenced through the faunal record, they occur in a rich variety of attitudes, compositions, and combinations. On the circular face of numerous stamp seals the particularities of this design field are exploited for compositions in which two quadrupeds (often of indeterminate species) are disposed *tête-beche* (stacked one atop the other and head to rump). Multiple quadrupeds are sometimes disposed in a ring around the circular field. There are occasional examples of crossed or intertwined animals; and examples of clever dispositions of a one-bodied quadruped with two heads coming off either end to create (along with the legs) a torque-like pattern. These types of compositions exploiting the circular medallion are prototypes for later formations that become staples of the decorative repertoire of Iranian animal art across the millennia.

Compositions on square and rectangular seal faces as well as on some pots introduce the heraldic composition of two animals presented face to face in a formal mode. The ibex has remained a favorite subject for this theme down through all of antiquity and into the decorative folk art of modern Iran.

The frequent depiction of sheep (the "comb-animals") and ibex in carefully paneled or at least tightly contained compositions on the painted pottery may encode a concept of domestication. Sheep and goats were critical mammal resources since they served multiple purposes (e.g., they yielded the all-important wool as well as milk and meat). An interesting rectangular-faced seal from Tepe Giyan shows a row of four ibexes as if behind a gate or fence, with only their necks and heads visible above the structure (Herzfeld 1941: 69 and fig. 130). This can only be interpreted as a fully explicit referencing of human's harnessing of animals to a controlled productive economy.

The ibex is an excellent link between art of the pre-historic and phases the proto-historic phase of incipient and early literate civilization in Iran. Here again, the site of Susa offers rich material for

analysis. This phase in the material record (in the final centuries of the fourth millennium) is noteworthy for the development of the cylinder seal, which takes on an extraordinary range of imagery. One masterful example from Susa displays two ibexes posed heraldically before a tree set atop a mountain indicated by a scale-covered mound (Pittman 1992: 68–77, esp. 74, no. 45). In the terminal field of the design, floral elements again atop a stylized mountain are enhanced by two horned animals (apparently gazelles) floating above the major (ibex) figures. These secondary horned animals appear to be engaged in a horn-butting contest. This seal exemplifies multiple aspects of a departure in artistic approach to the representation of animals from what we saw in pre-historic times. The formal abstractions of pre-historic art (so appealing to late twentieth century sensibilities) have given way to more robustly determined, muscular figures that stress a sense of mass more than line. There is a tendency toward more naturalistic treatment of the animals' movements and relation to features of landscape.

Later, in Elamite art of the third and second millennia, we find the ibex as a sacred offering. Cylinder seals display a pious petitioner coming before a seated deity holding a tiny ibex (Amiet 1972: pl. 157, nos. 1678 and 1684) and precious metal votive statues of (royal?) worshipers holding the ibex have been discovered as well (Amiet 1966: 418–21; Tallon 1992: 145–48). An early second millennium Mesopotamian text records a goat (ibex) statue brought as tribute from Anshan in Elam. Dating to the end of the same millennium, a stone sculpture in the round presenting the head and neck of an ibex (apparently the terminal of an instrument or furnishing of some sort) gives a good feeling of what such statues must have looked like (Amiet 1966: 434). The horns and ears, now missing, would have been attached separately with dowels inserted into the still visible holes in the head. The carving is a beautiful blend of softly modeled passages and sharp, sure-lined ribbing around the eye. We will see this same type of congruence of forms in the animal sculptures of the Achaemenid Persian court at Persepolis.

At approximately the same era as this ibex head from Elam, a different stylistic tradition of animal representation existed at the northern site of Marlik near the Caspian Sea. Here, earthenware vessels in plain-surfaced, abstract animal shapes including the ibex as well as the more prevalent humped bull display a sculptural concept that revels in a sense of volume, where the animal form has

been reduced down to its most essential set of masses (e.g., Bagherzadeh *et al.* 1981: fig. 51). The reduction had a special meaning. It has nothing to do with a lesser capacity to render observed nature in the "provincial" north. Indeed, Marlik culture and the traditions of the larger arena along the Caspian offer startling evidence of artistic resonances at various times and in various types of artistic product with Elam, with Assyria in northern Mesopotamia, and also with cultures of the neighboring Caucasus (Calmeyer 1995; Negahban 1983). Rather than see these zoomorphic vessels as primitive folk art in a derogatory sense, we might consider that they focused attention on the interiority of the beast—on the animal's being rather than its compellingly beautiful surface attributes. As Arthur Upham Pope explained the use of zoomorphic vessels of ancient and medieval Iran, they originated in the notion that "liquid imbibed from a vessel resembling one of the more vital animals would magically convey something of that animal's own vitality" (1945: 64). Such vessels remained a major feature of Iranian tradition, as manifested in the development of the animal "rhyton"—a zoomorphic beaker exploiting the curved shape of a horn (see below on the horse).

The multiplicity of animal styles across the varied social and geographical landscape (as this is exemplified in the comparison between northern and southern phenomena at the close of the second millennium) reinforces the sense that animals were tremendously important to the aesthetic of all of ancient Iran. This multiplicity makes animal representations an ideal window through which we may observe nuances of variation in a broader sense within this highly differentiated environment.

Ancient Iran was replete with artifacts that incorporated animal representations as essential functional features of vessels, jewelry, and implements. Abundant evidence exists of stone and metal vessels either in the form of animals or with supporting members that took the form of animals (or parts of animals). This tradition had a lasting impact on the plastic luxury arts of the land. A three-legged shallow dish of bitumen with shell and precious inlays exemplifies an early version. Dating to the early second millennium and excavated from a tomb at Susa, the supporting legs terminate in outward curving sculptures of the ibex (Amiet 1966: 252 and 280–81, 282 for a less refined example of the same type). This artifact brilliantly merges the aesthetic dynamic of the animal form and the functional

service it renders to the object. The protome displays the ibex's forelegs tucked under, while his body sweeps upward to terminate in rear legs carved onto the surface of the supporting members.

Related vessel forms deploy animals as decorative handles usually arching elegantly from the body to the lip of the vessel. Several animals in addition to the ibex are used in this capacity. A notable case is the duck, who gracefully forms the handle of a Neo-Elamite bowl of clay (Amiet 1966: 493), and the duck or swan whose head forms the terminal of an undulating handle of an Achaemenid silver spoon excavated at Pasargadae, the first heartland capital of the Achaemenid kings in southwestern Iran (Stronach 1978: 203 and pls. 150–51). From the same site, a silver spoon was found whose handle is in the shape of a bull's leg complete with fetlock and cloven hoof. The bowl of the spoon in outline suggests the upper part of the leg as it would join the body at the haunch. And thus in an ingenious way the whole implement for the serving or eating of food makes an allusion to a food-producing animal (Stronach 1978: 203 and pl. 152).

The jewelry of the Achaemenid court also emphasized terminals in the form of animal heads and the heads of fantastic creatures. Such items are represented as gifts to the king on the stairway reliefs of the Apadana at Persepolis, where ram-headed torques (poorly preserved, alas) appear among other examples (fig. 5.4, left). They are also known from actual excavated artifacts. A lion-headed type was excavated from a tomb at Susa (Tallon 1992: 242–47) and a stunning pair of gold bracelets from Pasargadae documents ibex-headed bracelets (Stronach 1978: 200–201 and pls. 146–47). The Susa find is comprised of a torque plus two matching bracelets, forming a lavish set made of gold with lapis lazuli, turquoise, and mother-or-pearl inlays. The Pasargadae bracelets are articulated with elaborate granulation rather than coloristic inlay. From Persepolis we have the actual mold for a jewelry finial in the form of a calf (Schmidt 1957: 79).

In the monumental art of the Achaemenid kings at Persepolis, the ibex does not seem at first contemplation to be a major participant in the artistic program in contrast to the bull and the lion, which are ubiquitous, as we shall see. But on closer consideration, we find that the ibex figures in a very special way here. This animal participates in a somewhat enigmatic relief sequence in which a kid and a lamb are shown carried up the stairs leading to several buildings

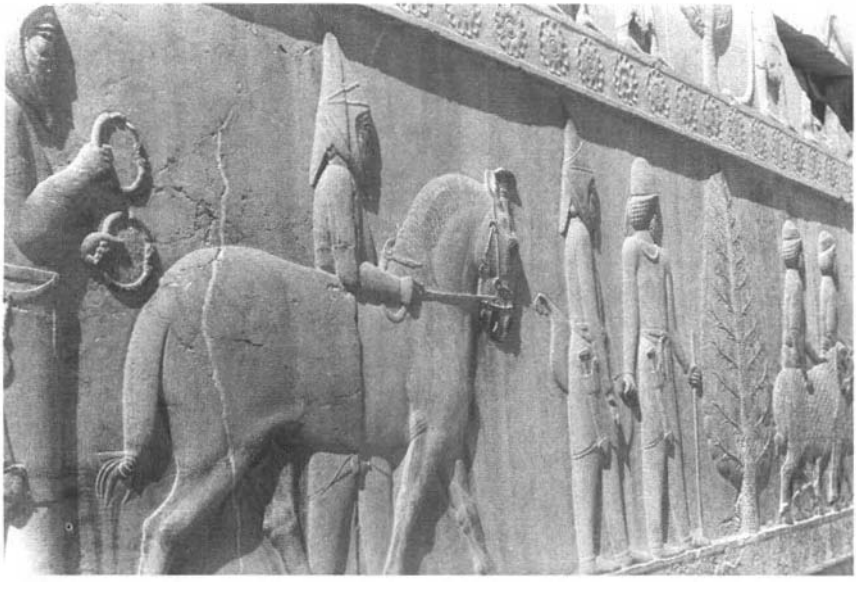

Fig. 5.4. Tribute group from the Apadana at Persepolis showing ram-headed torques in hands of figure on left. Photo courtesy of M. C. Root.

of a relatively private nature (e.g., Schmidt 1953: pls. 85, 155–56, and 163–64). These reliefs, which also incorporate people carrying covered containers, have generally been thought to represent foods brought in preparation for a royal banquet in celebration of the Iranian New Year. Occasionally this has been queried in art-historical discussion (e.g., Moorey 1978: 221), but the problem has not been foregrounded yet in these circles. A recent reinterpretation, which focuses on textual clues, suggests that perhaps the little animals and other items are, instead, rendered praise-gifts ("tribute" of a sort) specifically brought by Persians (rather than by foreign peoples) to the king (Sancisi-Weerdenburg 1998). We can add to this discussion through more attention to features of the representations of the animals in the reliefs. The kids and lambs are carried up in an attitude reminiscent of the early Elamite offering bearers on seals and sculptures noted earlier—although at Persepolis the scale of the baby animals relative to the humans is more naturalistic. The animals are not held like game, as they are on an Assyrian palace relief of Sennacherib (J.M. Russell 1991: fig. 87). Rather, they are held in a manner similar to animals in Neo-Assyrian art in contexts of ritual and imminent sacrifice, as on reliefs of Sargon II at Khorsabad and on

seals that depict some type of imminent sacrifice relating to kingship (van Loon 1986: pl. 60, ill. 7; see also Moorey 1978: 225, n. 12).

While the interpretation of these stairway reliefs remains unresolved, there is some validity to the notion that the baby animals are shown *en route* to being sacrificed—whether they are brought for that purpose by Persians whose gifts of the animals denote a political as well as a ritual service to the king, or whether they are brought by courtly personnel in performance of their designated religious duties (which we do not perhaps understand fully). And whether or not the rituals involved here culminated in a "feast" on the sacrificed animals is yet another matter.

On the jambs of windows inside one of these palaces decorated on the exterior with the kid and lamb imagery (the Palace of Xerxes), a figure is shown leading a magnificent mature male ibex into a room (Schmidt 1953: pl. 187). In this instance, the scene suggests not so much a symbolic attitude as a depiction of a man actually herding the ibex in (albeit with great deference). In Zoroastrian cult the goat was precious for its milk, which was used in the liturgy at least by the time Zoroastrian practices were codified (Kotwal and Boyd 1991). This representation, coupled with the exterior scenes of sacrificial animals, thus suggests that we are seeing a programmatic allusion to preparations for a liturgical function. Obviously there is an issue here, nonetheless, since the mature ibex being led in through the window is clearly represented as a male with the distinctive horns. He should not in nature be a source of milk. It is possible, however, that we witness here a kind of symbiosis of male and female virtues in the ibex. The male's horns are the aesthetic hallmark of the animal, the feature that makes the ibex totally distinct from any other creature. Furthermore, there are other cases in which the actualities of nature have been re-interpreted to fit the aesthetic and ideological needs of the Achaemenid program at Persepolis (see the "Lion and Bull," below). Whatever the precise nuances of the ibex are on these reliefs, they reinforce the fact that the ibex remained a potent symbol in Iran down into the courtly arts and ceremonies of the Achaemenid kings.

Fragmentary life-sized, free-standing stone statues of ibexes also existed on the Persepolis citadel (Schmidt 1957: 70 and pl. 36; discussed also by Kawami 1986). These perpetuate the tradition of such statues already documented for the earlier Elamite court. Seen in conjunction with features discussed above, it seems inescapable that

new symbolic overlays were added to these free-standing images by virtue of the impact of Zoroastrian belief under the Achaemenids.

On the Fortification tablets there are many seals that indicate profound meanings associated with the ibex, at least among a significant number of individuals owning distinctive seals. In one particularly interesting example, for instance, an ibex crouches under a winged symbol of Ahuramazda while two great lions stand by to either side. The entire vignette suggests that the ibex was found under the protectively hovering divine emblem (Garrison and Root in press b: PFS 1190). Another seal suggesting the important meaning attached to the ibex among some members of the Persepolis court shows an archer shooting arrows at a lion who is mauling an ibex (fig. 5.3b; Garrison and Root in press a: PFS 35*). An unusual feature here is the dramatic expressiveness of the ibex. He is backed up against the inscription panel of the seal, sinking toward death as his body slides down under the lion. Numerous other seals in the Fortification corpus display the ibex in beautiful stamp seal studies that perpetuate time-honored visual traditions in Iran: e.g., heraldic ibexes before a sacred tree (PFS 194s and PFS 1313s) and many studies of isolated ibex figures in elegant compositions (e.g., PFS 283s, PFS 1207s, PFS 1292s, PFS 1512s), all of these seals to appear in Garrison and Root in press b).

BULLS AND COWS

A small number of late pre-historic seals show a horned quadruped (presumably bovine) posed as if nursing her young (fig. 5.5). This theme was developed more fully later—specifically in representations where the animals are clearly bovine and where it takes on a more closely observed relationship to nature. The cow's udder is usually shown, and the mother will lower her head and turn it around to watch her calf. The motif enjoyed great significance in Mesopotamia and Syria of the early-mid first millennium. Its appearance on a metal beaker from Marlik at this time prompts the question of the possibility that already in the early first millennium the material record is indicating a special reverence for the image borne out of the incursion of Indo-Iranian belief filtering into the region (Calmeyer 1995: 41–42; Negahban 1983). On this particular prestige vessel, a frieze of suckling cows moves around the bottom—initiating an entire

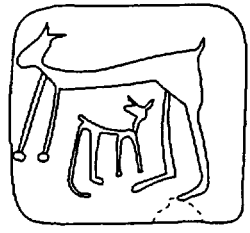

Fig. 5.5. Drawing of a modern impression of a stamp seal from Tepe Giyan: Kelsey Museum 93.1.140. Scale 1:1.

chronological narrative of the life cycle in the animal world and resonating with a tendency that is prevalent in Zoroastrian thought to cast the spiritual experiences of humanity in terms of the natural order of animals. The imagery is also documented at the first millennium Iranian (Median) site of Nush-i Jan (J. Curtis 1995: 23).

We meet the suckling image again in the last phase of our historical survey, at the court of Persepolis. A cylinder seal impressed on numerous Fortification tablets attains a version of the age-old suckling motif that observes the intimacy of the subject in the natural world while simultaneously casting it in an extremely elegant mode (fig. 5.3c; Garrison and Root in press b: PFS 83*). The cow's udder is portrayed with great care and detail (especially so given the minute scale of this carving). In lively contrast to this naturalism, the mother arcs her head over her back to look down at her calf rather than swinging her head down and around as is done in nature and on earlier prototypes in Near Eastern art. This shift in posture exploits the design potentials of the emblem in a new way. Possibly there is meaning embedded in this compositional change. It is tempting to compare the pose and aura of this cow to that of the bull in the Lion-Bull symplegma to be discussed below (fig. 5.6). Here on PFS 83* (fig. 5.3c), the cow seems elevated to a special sphere partly by the way she holds her body and partly by the wings she has acquired. Framing the suckling scene is a winged symbol of Ahuramazda held aloft by a winged man-bull.

Already in pre-historic times the suckling image alluded to the important concept of fertility and successful breeding in societies dependent upon food production. The motif gained currency in the ancient Near East during the first millennium (Moorey 1978: 150–51). But the artistry of this seal owned and used at Persepolis by a high official of the Persian empire may specifically reflect the fact

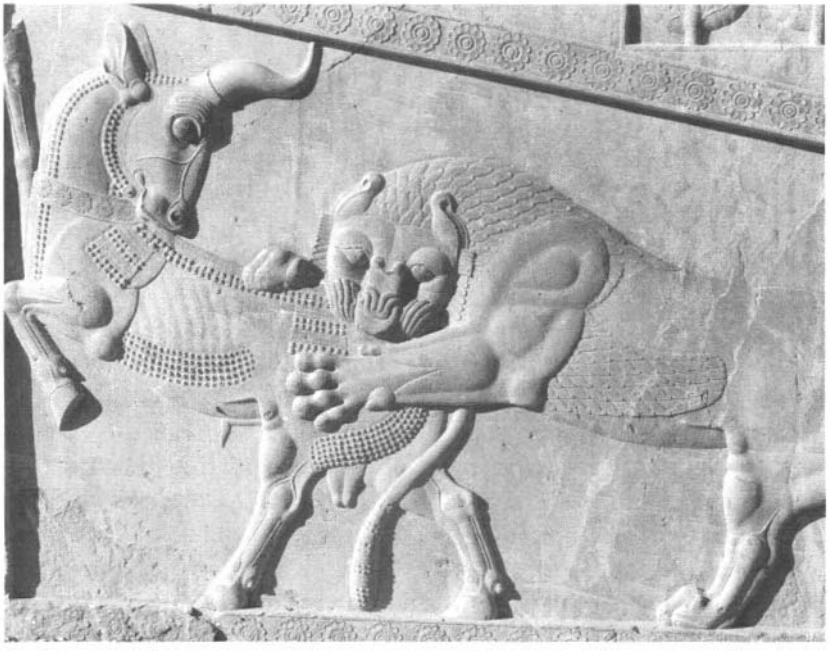

Fig. 5.6. Lion and Bull symplegma on the Apadana at Persepolis. Photo courtesy M. C. Root.

that bulls were revered in Indo-Iranian tradition as this became crystallized in the "Mazdaistic"/Zoroastrian faith. They were a symbol of purity, they were considered the first animals to live on earth, and they were key to some of the most important ritual practices (Kawami 1986: 263; Busch 1985: *passim* and 100–103; Kotwal and Boyd 1991: 96). The nurturing of the calf by its mother became, by extension, a supremely powerful metaphor for the protection of animals (and thence the maintenance of social order) in this environment charged with Indo-Iranian ethos.

Bovines played a relatively minor role quantitatively in the late pre-historic artistic repertoire as it is currently known to us. But like the sheep and ibex, they are well-documented archaeologically. They seem to increase in importance economically, and become an increasingly important feature of the representational tradition with a wide range of thematic and symbolical associations already in the proto-historic period. Bitumen vessels from Susa of the early second millennium display the bull protome emerging fully in the round in much the same way as other vessels present the ibex or sheep.

The pattern of tucked up forelegs is already well-established here for bull and ibex protomes. They convey the sense of the animals at rest but submitting to the needs of humankind. Simultaneously the format saves material in production and minimizes risk of broken appendages.

The concept of the animal protome finds culminating expression in ancient Iran in the colossal double animal capitals of Achaemenid palaces (Schmidt 1953: 104 and *passim*). These sculptures in the service of architecture formed saddles to support the roof beams of soaring many-columned halls. The most prevalent type was the bull capital. The form of these figures is a typical Iranian mix of decorative surface stylization (reminiscent in texture of the densely granulated or inlaid theriomorphic finials of fine Achaemenid metal jewelry) and sensitive passages of modeled flesh. (These qualities may be appreciated from fig. 5.6.) The bull protome capitals had necklaces of rosettes with pendants in the form of an inverted lotus. Their ears and horns were doweled in place, so that they could project from afar the powerful nature of the beast.

When we look carefully at the inserted ears, we can appreciate the strange and compelling collusion of abstract and naturalistic forms that is such a calling card of Iranian animal art (fig. 5.7). The edges are delicately ruffled; the backs are sensuously modeled to the point that we might expect to touch them and find them warm and soft, ready to flicker slightly in response to a fly. The fronts of the ears share the same ruffling edge, of course, but here the ruffles transfer into crisp ridges inside the ear. These ridges in turn give way to stylized tufts of fur. The interior ridges and the tufts of fur are both features in nature of the bull's ear. In sculpted form at Persepolis they acquire, however, a formal property of abstraction that transcends the goals of representing a specific animal. The tufts of fur are rendered in a tongue pattern that is used all over Persepolis for specific purposes relating to flora and fauna. It occurs on certain other animals and it is used to signify petals on rosettes and other floral elements (including the massive inverted floral column bases that are hallmarks of the symbolic landscape of the site). Rosettes literally stream over the site, so that the tongue pattern is everywhere—and everywhere associated with this symbol of fertility and royalty combined. Through the use of this formal device, the program of imperial art at Persepolis fully integrated flora and fauna on a subliminal aesthetic level (Root 1990: 125–26).

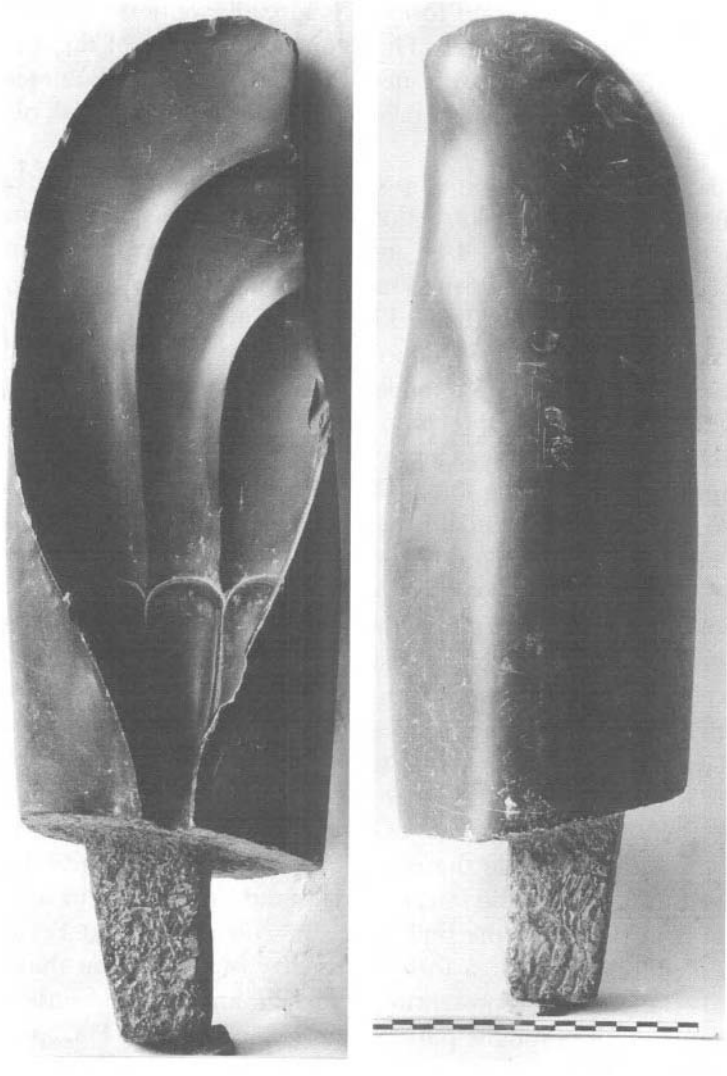

Fig. 5.7. Bull's ear inserts for protome capital at Persepolis. Photo courtesy The Oriental Institute of the University of Chicago.

Originally, the bull protomes were also painted, as were other sculptures in the Achaemenid palaces—with a palette that included red inside the mouths and flaring nostrils. They presented a mixed message of harnessed power and latent force—all in the service of a program stressing dynastic fertility and economic/imperial stability.

Already in second millennium Elam, a guardian bull statue in the round is documented from the ziggurat precinct at Choga Zanbil near Susa (Amiet 1966: 352). This half life-sized animal was made of glazed terracotta and stood alert on all fours. It was modeled in a rather naturalistic mode, with smooth rather than stylized decorative surfaces and distinctive protruding hip bones, shoulder hump, and folds of skin at the neck. At Persepolis in the late sixth or early fifth century, guardian bull sculptures in the round again appear (Schmidt 1957: 70 and pl. 37 B–C). Interestingly they are also distinctly naturalistic compared to the decoratively stylized bulls associated with architectural elements (as in fig. 5.7). This difference has prompted the theory that the bulls must depend upon Greek inspiration (Kawami 1986). But the chronological priority of the Greek comparanda is not at all clear. The capacity of Iranian traditions to inform the representation of an animal with naturalistic, tangibly lifelike plasticity is demonstrable. It is useful to consider the possibility that the deployment of naturalistic animal sculptures for free-standing elements of the programmatic landscape at Persepolis served to mediate between the symbolic formalisms of the official architecture and the actualization of the environment by living people and animals, who came (among other things) to give gifts and to be gifts to the king.

Bulls figure prominently in the imagery of heroic encounter on the palaces at Persepolis, where again they share the ornamented forms of jewelry and column-capital protomes. Abstractly rendered sculpted bull's horns also crowned a parapet along a stretch of the western wall of the citadel of Persepolis, visible from the plain below. These elements, combined with the ubiquitous lion and bull symplegma (see below) created a dynamic mix of bull imagery. This animal was certainly a symbol of royal power during the Achaemenid empire—just as it was in earlier phases of Mesopotamian and Iranian culture. Bulls were noted for their great strength and their ability to be incited to ferocity. At the same time, domesticated cattle formed a mainstay of agrarian society and symbolized a range of aspects of

fertility, affluence, and peaceful pursuits. The extra overlay of "Mazdaistic"/Zoroastrian belief in the supreme place of the bull may have been at least equally important in the manifestations of this animal at Persepolis.

LION

The lion, like the bull, had a venerable place in the ancient Near East as a symbol of kingship. Undoubtedly this related in part to the simple reason that the lion was observable as a powerful and beautiful wild animal; a predator with a regal bearing. I have already remarked upon the occasional occurrence of the lion as a predator in pre-historic glyptic art and the increasing importance in the representational tradition by the proto-historic period. Very quickly, allusions to the lion became more complex and multivalent.

In third millennium Elam, several stone lion protomes are documented that served as members of divine platforms or thrones (Amiet 1966: 172: 226–27). A freestanding cult statue of the goddess Narundi seems to echo the associations with the lion held by the Mesopotamian goddess Inanna/Ištar who reigned in the spheres of love, fertility, and ultimately warfare as well. Narundi's throne bears six lions as well as the rosette symbol (also a symbol of Inanna/Ištar in Mesopotamia). The two large lions on the back side give the monument a specifically Elamite flavor. They are posed as human guard figures, invoking the old motif of animals playing human in Elamite tradition. Another remarkable monument from the same period is a votive boulder from Susa. Carved on the top surface of the rock is a large serpent coiling around a central hole that once would have received a symbolic foundation peg. On the vertical surface, a massive raging lion curls around, facing a god who kneels with a foundation peg, while a female deity brings up the rear. This tremendously interesting artifact brings into sharp focus, once again, the specifically Elamite chthonic traditions active in this region of Iran and encoding a basic repertoire of material culture shared with Mesopotamia with a distinctive nuance of animal imagery. The lion as well as the serpent were invoked here symbolically to guard the building for which this object was a foundation deposit (André-Salvini 1992: 87–91: for recent discussion of both these monuments).

At the site of Hasanlu in northern Iran on the southern edge of

Lake Urmia, a rich assemblage of excavated artifacts emerges from the context of a settlement destroyed by violent attack and fire in about 800 B.C. Thought-provoking analysis of the personal deployment of lion imagery on bronze pins among females at this site has suggested the possibility that lion pins were used by women as a symbolic mechanism for acquiring and signifying power in an environment of escalating anxiety about vulnerability to military incursions from without (M. Marcus 1994). While the evidence may be open to alternate interpretations, the analysis raises our awareness that the richly animal-ornamented jewelry and implements of ancient Iran may at least in certain environments have carried highly charged meanings for their users.

Frozen tombs in Siberia have yielded an array of gold and textiles. Among these are lion-head roundels of felt that formed borders of wall hangings in the Scythian nomadic style. The felt cutouts relate to closely similar (but unprovenanced) gold examples that would have been sewn on garments. Other textiles incorporate a border of walking lions. These assemblages date within the Achaemenid empire and they reflect awareness of heartland Iranian traditions. Indeed, there was a give-and-take between the luxury products of Achaemenid workshops and the materials produced under the patronage of the wealthy nomadic chieftains of the northern steppes who did not owe direct political allegiance to the Persian king but did interact with his hegemony on many levels (Lerner: 1991). In this nomadic sphere, elaborately stylized animals reigned supreme. The interplay between Scythian stylistic traditions in the rendering of animals (observable through actual preserved textiles) and Achaemenid sculptures depicting textiles is particularly evident in the stylized musculature of the walking lion—where the shoulder is rendered in a distinctive figure-eight pattern (fig. 5.6; Schmidt 1953: pl. 142).

At Persepolis itself, the lion (along with the bull and the rosette) seems to be everywhere. Lions parade across architectural lintels, along borders of royal baldachins represented on the reliefs, and along the multiple edges of the royal robes represented on the reliefs (Tilia 1978: 31–69). The lion and the rosette were both symbols intimately associated with Mesopotamian Inanna/Ištar. That they are found in such insistent profusion together at Persepolis indicates a conscious decision to revitalize this age-old program of fertility imagery linked to kingship. It is difficult to say whether the revival

in Achaemenid times was via the intermediary of local Elamite representations such as that of Narundi or via Mesopotamian tradition.

Small-scale freestanding statues of reclining lions with crossed paws and head, turned to one side resting on the upper paw, were excavated at Persepolis (Schmidt 1957: 70 and pl. 36 D–E). These sculptures have antecedents in late third and early first millennium courtly and religious art at Susa (Amiet 1966: 228–29, 366). In the latter case the sculpture comes from a royal funerary context. A larger example (one of at least two of its type) probably dates to the eighth or seventh centuries. At 1.360 meters long, it is about the same size as the Persepolis lion sculptures. With its mate, this Elamite lion served as a guardian of a temple (Amiet 1966: 524–25), whereas the Persepolis lion sculptures guarded some installation on the Persepolis citadel (their precise location now uncertain). All these Elamite renditions are of glazed terracotta; they uniformly look straight ahead in a guardian type pose rather than resting the turned head on crossed paws. But in Egypt there is a very strong tradition specifically of the crossed-paw lion as a regal image. It seems likely, given the importance of Egypt and Egyptian kingship to the Persian ruler who now controlled this coveted region, that the Persepolis lion sculptures make a direct allusion to pharaonic ideology.

Given the importance of the lion in Achaemenid imagery, it is interesting to note that this animal is not a favored beast in Zoroastrian belief. It has been suggested that despite its generally demonic associations in Zoroastrian teachings, the pervasive royal significance of the lion enabled it to survive and even to thrive within the strictures of faith (whatever these were precisely) in Achaemenid times (Jamzadeh 1991: 36). The lion, like the elephant, was able to move from the category of impure animals in a form of theological reprieve through which the lion maintained a special place, respected for its lack of fear and therefore associated with royalty (Choksy 1989: 15).

On the Apadana reliefs at Persepolis, men from Elam are shown bringing a lioness and two cubs as gifts for the Persian king (Schmidt 1953: pl. 28). The lioness is portrayed with full pendulous teats. She is led on a leash by an envoy who wields a stick. Clearly enraged to the point of great ferocity, she turns her snarling face around to monitor her two babies in the clutches of the last two ambassadors in the parade. Of all the animal gifts in the Apadana procession, this is the only set that depicts an emotive narrative. The other sets show animals in ceremonial mode as hieratic status symbols.

Presumably this lion family is destined for a hunting park of the king: a gift for his royal pleasure. In late antique Iran, under the Sasanian kings (as also in the west with the Romans), there is evidence of the practice of lion hunting for sport in which the lioness is baited to emerge into the open by means of her cub (Harper and Meyers 1981: 76–78, pl. 25). There may, however, be a simultaneous deeper political meaning encoded in this gift of the captive "queen" of beasts with her babies as brought specifically by the Elamite envoys at Persepolis. If so, it would perhaps involve a symbolic expression of the Persian king taking over the dynastic prerogatives of the ancient indigenous Elamite kingdom that once reigned in the heartland region of southwestern Iran.

LION AND BULL

The pre-historic repertoire lays the groundwork for a long tradition in Iran of imagery of one or more lions attacking a bull, goat, deer, or other horned animal. This image in variants occurs, for instance, on stamp seals from Tepe Giyan late in the pre-historic sequence. The lion and the bull as a group become prominent in the proto-historic period. The theme in pre- and proto-historic times may relate to animal husbandry and the threats posed by predatory wild beasts to the social order of domesticated animals and herded flocks. But it is important to remember that wild bulls were dangerous beasts and not necessarily always conceived of as the victims in these emblems. The lion-bull relationship eventually acquired dimensions of equipose in ancient Iran. The dynamic of predator-prey cedes to one of symbolic collusion. This is nowhere more evident than on the lion and bull symplegma emblazoned on the facades of major palatial structures at Persepolis (fig. 5.6). Here, a male lion bites the rump of a rearing bull whose head turns back gracefully in witness. This is not a straightforward depiction of a lion kill. Male lions in nature very rarely serve as the hunters; the female does this job. And although there are elements of verisimilitude about the way in which the lion seems to come around on the bull from the side, the composite impression conveyed is more reminiscent of leonine mating foreplay than the hunting kill. Obviously, once again, we are not suggesting a literal depiction of a male lion mating with a male bull. We are suggesting a symbolic association. The lion and the bull were

the two most powerful and noble of beasts in the Iranian sphere. The emblem projects their union in a symbolic landscape of abundance signifying the combined powers of nature brought together by and for the Achaemenid empire.

The lion and bull image simultaneously relates to the interplay of the constellations of Leo and Taurus. Leo overcomes Taurus at the vernal equinox; and thus on one level the emblem signifies the dawn of the Iranian New Year (Now Ruz)—such an important moment in the developed Zoroastrian calendar. Finally, the lion was a symbol of the sun and the bull a symbol of the moon. Both sun and moon are illuminators of the sky, sources of light. Their union of forces is expressed by the animal symplegma on the palace facades and also in abstract form by the symbol of a solar disk inscribed with a crescent moon that hangs in the sky above the fire altar worshiped by each Achaemenid king on his rock-cut tomb relief (Schmidt 1957: e.g., pl. 49). In a different form of abstraction, the lion and bull motif is echoed at Persepolis on the throne furniture of the king (Jamzadeh 1991). On the sculptures, his throne chair has lion paw legs; his footstool has bull hoof legs. On some renderings of the royal canopy over the king, files of bulls alternate with files of lions.

Although ubiquitous on the palace facades at Persepolis, the image of a lion attacking a bull is extremely rare among the seals impressed on the Persepolis Fortification tablets. Numerous seals in the research corpus display a lion attacking prey in a combative quasi-realistic mode. In almost every one of these cases, the prey is a deer—often a stag with great branched antlers (e.g., Root 1991: figs. 4, 5; Garrison and Root in press b: PFS 857s and PFS 142). The distinction between these scenes referencing predator-prey relationships in the natural world and the lion-bull emblem on palace facades is critical. On the basis of the quite extensive visual record from the heartland of the empire that we can now query, it seems that the scenes of the lion attacking prey in a composition evoking naturalistic combat do not involve the bull. Images of the lion attacking the bull seem to be extremely limited beyond their occurrence in sculptural form on palatial facades. When images of the lion and bull do occur in other media (primarily seals) they are similarly stylized symbolic representations that pursue an agenda different from the portrayal of the lion as hunter in the wild or marauder of domesticated beasts. One seal used on Elamite Fortification tablets in the Garri-

son and Root research corpus that does depict the lion-bull image is a stamp seal owned by a camel driver (Garrison and Root 1996: fig. 1a–b; in press b: PFS 1532s). The association of this seal with this particular individual shows that although the lion-bull image was uncommon on seals in use in the heartland of the empire at this period, it was apparently not restricted by edict to some royal prerogative or to the upper echelon of court society. Presumably the camel driver selected his seal emblem because of some meaning it held for him. Perhaps this had to do with the manifestation of ever present light through the equipose of lion (sun) and bull (moon): light signifying guidance along the path and freedom from the treachery of darkness for the professional long-distance traveler. In a charming way, this man on the move impressed his seal three times on one tablet to make a connected chain of images—with the one in the middle carefully inverted. This suggests the man's investment in the aesthetic and symbolic properties of his seal. We might hypothesize that the chain he made in the clay was a kind of signature statement recalling the passage of his camels across the desert protected by the sources of light. It becomes noteworthy, as we ourselves move on with our analysis, that the camel driver at Persepolis did not choose to buy or commission a seal showing a camel.

CAMELS, HORSES, DOGS

Camel

The camel is not attested in the early art of Iran, despite the fact that faunal records occasionally reveal its presence (Zeder 1991: 219 and 235). The animal is rarely depicted even in historical periods in Iran until Parthian times at the close of the first millennium. This is particularly the case if we discount a couple of unprovenanced artifacts of problematic origin (illustrated in Bulliet 1975: 160). The camel was important in Achaemenid Iran for bulk transport and as a mount in warfare. But although they are mentioned frequently in the Fortification tablet texts (Hallock 1969), not a single camel appears in the corpus of associated seals impressed on these tablets. In the art of the Achaemenid period the animal seems to have found little resonance outside its value as indicating a specific prestige gift characteristic of particular camel-rich regions such as Arabia, Bactria, and Parthia. On the Apadana stairway reliefs at Persepolis

camels are depicted as gifts brought to the Persian king (Bulliet 1975: 162–63). These representations are faithfully executed—even down to the accurate rendition of the nose-halter for the one-humped dromedary and the nose-peg for the two-humped variety. There is, thus, no question of the artists at the Persian court having difficulty producing compelling naturalistic renditions of this animal when called to do so. The paucity of representations of the camel at this time is especially interesting since artists of the Achaemenid empire (as also earlier in Iranian tradition) delighted in creating imaginary long-necked creatures whose necks intertwined in elegant patterns (e.g., Garrison and Root in press b: PFS 3, PFS 81*, PFS 1084*). The actual camel seems not, however, to have been an inspiring subject for such exploits.

Evidence from the Indo-Iranian text traditions of the Rig Veda and the Avesta further mystifies the paucity of depiction of the camel except in the highly specific context of the Apadana facades. For in these texts, the camel is a valued animal, if lower in the hierarchy than the bull and the cow with calf (Bulliet 1975: 141–75, esp. 153–61; see also Busch 1985: 197–98: peon to the camel embedded in the Bahram Yašt [Yašt 14]). Camels were closely associated with nomads. Perhaps there are hidden issues of social differentiation determining the camel's virtual absence from the types of artifact assemblages we currently have available. Were we to discover intact burials of nomadic chieftains of the desert regions analogous to the Achaemenid period discoveries in the steppes of Siberia, we might need to change our characterization of this issue completely.

Horse

Like the camel, the horse was a relative latecomer on the scene in Iran. In this case, however, the animal became a prominent figure in art once its place in the world of humans had been established. A very early representation is found on a shell inlay plaque from Susa, dating to the mid-third millennium and surely forming one element in an extended figural frieze (Amiet 1966: 194–95). The animal appears to be wild. It wears no trappings and displays a short-legged stocky build. Apparently a stallion (to judge by what look to be genitalia cursorily inscribed between the hind legs), it walks forward with its head extended, mouth open, as if neighing. Possibly this horse was part of a frieze of horses depicting alternating males

and females (a frequent device in ancient Near Eastern representations of animal files in various species). Possibly also the frieze depicted a more narrative scene involving aspects of the corraling and taming of horses. Contemporaneous inlay friezes in Mesopotamia depict lively milking scenes, so the idea of such a narrative involving the logistics of animal husbandry is plausible as a concept. For either of these suggested scenarios the neighing stallion with aggressively jutting head would fit right in. This artifact is a precious indication of the knowledge of horses (and the burgeoning artistic interest in them) in Iran at such an early period.

By the turn of the first millennium and slightly later, we begin to see a profusion of sources for assessing the role of the horse. From Tepe Sialk in central western Iran, painted spouted vessels incorporated depictions of animals—now including the horse—in a somewhat primitive style that seems to be a debased reminiscence of the pre-historic painted pottery tradition. Despite their relative crudity, these pots infuse old forms with a new repertoire of animals and an earthy exuberance (Bagherzadeh *et al.* 1981: color pl. 5). They suggest an increasing familiarity with the horse in a domesticated environment where the animal is seen in the context of other domesticated beasts and where it is decorated in ways that suggest blankets and other trappings.

From the site of Hasanlu our knowledge of the horse moves into an entirely different sphere. Here, horse burials are documented and lavish assemblages of meaningfully-charged horse trappings bespeak the practical importance, the prestige, and the symbolic associations of this animal (Schauensee 1989; Winter 1980). A bronze drinking vessel in the form of a horse's head is an early example of the "rhyton," which is attested in this same shape but rendering a bull on Assyrian palace reliefs. This type of vessel, mentioned earlier in connection with theriomorphic pots from Marlik, evolves in Iran into a shape in which the drinking horn is placed at right angles to the animal protome. In this form it becomes a hallmark of Iranian custom through the Achaemenid, Parthian, and Sasanian periods (Porada 1965: 121; Gunter and Jett 1992: 23–24). Contemporary Assyrian annals refer repeatedly to the raiding of western Iran's grassy foothills for prized horses; and splendidly dressed horses are represented as tribute gifts brought by Iranian groups to King Sargon II (Roaf 1995: 59–61). The Hasanlu excavations anchor these texts in a material framework. It is to be expected that excavations now on-

going in Iran, for instance at the much-plundered site of Ziwiye, will reveal contextualized data on the pre-Achaemenid horse from a place in the heart of Median territory (where the Assyrian annals seem especially to have focused their horse-raids).

Susa offers evidence in the early first millennium of glazed terra-cotta animal protomes (including a yellow-glazed horse with green decoration at its neck) used as architectural embellishments set high up in walls (Amiet 1966: 506). This is an important backdrop for considering a unique find from the first Achaemenid royal city, Pasargadae. Here, early excavations revealed fragments of a horse protome animal capital (Stronach 1978: 73–74 and pl. 55). So far this is the only example of a horse capital retrieved from any of the Achaemenid royal installations. It is not surprising to see evidence of such a prominent position accorded to the horse in Achaemenid Iran. The horse was very important to the Achaemenid ethos of royal and manly prestige. Royal inscriptions cite Persia as a land of good horses and good men; they proclaim the king's virtues in terms of his equestrian ability and his skills at warfare of all kinds on horseback (Kent 1953: 136, DPd, 140, DNb). We also know from the Persepolis Fortification tablets as well as the Greek historian Herodotus that fast messengers on horseback crisscrossed the vast empire delivering letters to the king, stopping at regular relay stations for fresh mounts.

In view of the importance of the horse, it may seem puzzling that the animal does not play a more evident role in the program of architectural sculpture at Persepolis. It is only on the Apadana reliefs that the horse appears on extant Persepolis sculptures. These depictions characterize the horse in real rather than mythical terms or as a symbolic icon. Three horses and two horse-drawn chariots are shown as part of the Persian retinue that brings up the rear of a great procession behind the king and crown prince (Schmidt 1953: pl. 52). And several delegations of gift-bearers from the subject lands of the empire bring a horse as a prestige offering to the king (fig. 5.4). These animals are in parade presentation, with top knots, knotted tails, and bells around their necks. They are beautifully modeled representations displaying subtle passages of musculature and facial features that do not generally come across optimally in photographs.

A group of seals carved in the late Elamite tradition (in the seventh century) depict horsemen engaged in battle or the hunt. One

of these, inscribed with the name and paternity of Cyrus of Anshan, grandfather of Cyrus the Great, founder of the Persian empire, is used as an office seal on the Fortification tablets generations after its manufacture (Garrison and Root 1996: fig. 2a–b; in press a: PFS 93*; Root 1991: fig. 6; Garrison and Root in press a: PFS 51). Both of these seals show a smooth modeled style, with the horse rendered at a vigorous gallop in a free-field composition. On the Fortification tablets numerous seals of Achaemenid date depict the horse but not as a mounted animal. Mounted horses do occur on seals applied to slightly later administrative tablets discovered in the Treasury of the site (Schmidt 1957: [PT Seal 18] 25 and pl. 6, [PT Seal 34] 31 and pl. 10).

An important set of evidence regarding the horse derives from a cache of correspondence of the Persian Prince Arsham, Satrap of Egypt, near the close of the fifth century. Arsham's cylinder seal is known to us through impressions preserved on sealings of letters written on papyrus and bundled up in a leather pouch. Two warriors are shown still alive—Arsham and one of four enemies. Rather than engaging with each other on horseback, however, their horses are standing patiently behind them while Arsham prepares to dispatch the last remaining enemy (Moorey 1978: 149 fig. 8).

One of the letters in the Prince's pouch commissions an artist to make a second sculpture of Arsham on horseback—like the one he has already done. We cannot tell from this communication exactly what the representations looked like. Were they reliefs or freestanding pieces? A mounted equestrian or a composition of man and horse standing face to face or side by side? Nevertheless the brief reference hints that equestrian sculptures did exist in Iranian court circles of this period (Root 1979: 129–30).

The horse was a prestige animal in ancient Iran among nomads. Horse trappings from the burials of nomadic Scythian chieftains in Siberia indicate lavish equestrian displays for this nomadic aristocracy. A carpet from one of these tombs includes files of men on horseback on parade. Here the horses are dressed much as we see them on the Apadana reliefs at Persepolis (Lerner 1991).

Horses were revered in Zoroastrian tradition. As one rendering of a segment of the Bahram Yašt reads: "Verethraghna, made by Ahura, came to him a third time, running in the shape of a white, beautiful horse, with yellow ears and a golden caparison; upon whose

forehead floated the well-shaped Strength, and Victory, beautiful of form, made by Ahura" (Busch 1985: 199).

Dogs

We have already encountered hunting dogs on pre-historic painted pottery (fig. 5.2b). During historical times canine imagery in Mesopotamia became associated with the goddess Gula. Its symbolic valences in Iran are less clear. A dog is listed as tribute to Mesopotamia from the Iranian highlands near the end of the third millennium (Kawami 1986: 261 n. 18)—suggesting the value and significance of the actual animal in both regions at this time. Elam has not, however, preserved for us a very strong indication of the role of the dog in its indigenous art and culture.

A bronze statuette purchased by the excavators at Susa from thieves who stole it in the course of work, portrays a standing worshiper with very large mastiff seated at his side. The piece should date to the early first millennium (Amiet 1966: 530). Later, during the Achaemenid empire, life-sized seated statues of mastiffs in local stone were excavated at Persepolis in a secondary context within the southeast tower of the Apadana (Schmidt 1953: 73, 102, figs. 46 A–B; 1957: 69–70, pl. 36A–B). A third such statue was discovered in 1953, still in an unfinished state (Sami 1955: opp. 68). The one well-preserved and finished statue was missing its head when retrieved in the 1930s. This has now been restored and is on view in the Iran National Museum in Tehran in its restored condition (Amiet 1980b: fig. 713). The restored head has clearly been modeled after the form preserved in the complete (but unfinished) statue excavated later. Thus, while the restoration has been viewed with some skepticism (e.g., Kawami 1986: 261), it is in fact based on solid evidence. The dog's bluntly-shaped head and muzzle as well as his bulging eyes, short rounded ears, and massive barrel chest are there incontrovertibly. It is noteworthy that these characteristics are shared with the earlier small scale bronze from Susa. The Persepolis dogs are rendered as powerful guardians. They are smooth, sleek, and well-muscled, with long tail. Prominent male genitals as well as prominent nipples apparently do not reflect some symbolic sexual hybrid, but are simply an accurate observation of nature visible on a short-haired male canine.

In the Zoroastrian faith, the dog had a special place, respected

for its courage and faithfulness. It served as an intermediary between the worshiper and his god; and between the living and the dead (Kawami 1986: 263). Dogs were revered as both hunters and guardians. They performed important duties in specific Zoroastrian purification rituals (Kotwal and Boyd 1991).

As with all the animals we have discussed in terms of their possible connections with Zoroastrian (or at least "Mazdaistic") tradition and practice, we cannot establish through textual evidence exactly what beliefs were being propagated already during the Achaemenid empire. We can only lay out aspects of the material record in an attempt to raise questions. The dog, like the camel, is not well-represented in the artistic record of the Achaemenids even though we know it was an important feature of practical life and a valued member of the animal kingdom reverenced in the Zoroastrian faith and probably in its "Mazadistic" manifestation at the Achaemenid court. The canine sculptures at Persepolis are important corroboration of the animal's cultural significance.

CONCLUSION

A survey of animals in the artistic record of ancient Iran provides rich access to a range of media, periods, and social-historical issues. It reinforces the notion that meaningful continuities and discontinuities existed in Iranian art through which we can glean significant insights. Disparities in evidence, combined in some cases with lack of systematic analysis of the known material record, keep some suggestions at the level of speculation pending further work. But an overview of ancient Iran specifically through its tradition of animal art does raise, and help to answer, many questions about how artistic representation served the needs of cult, magic, and power relationships. Such questions are key to our increasingly fine-tuned appreciation of the civilizations of ancient Iran.

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CHAPTER SIX

ANIMALS IN SYRO-PALESTINIAN ART

ANNIE CAUBET

Animals in the art of Syria-Palestine are only one of the main categories of representations in Near Eastern art as a whole. The same constants can be observed: The image of the animal is on a par, at least, with that of the human being; animal images occupy a pre-eminent place in the evocation of the divine, itself in the forefront of artistic representations; and as a result, animals in art have an essentially symbolic role. The elites of society were the main sponsors of artistic creation and imagery was at the service of their ideology. However, as in the entire Near East, relations between the real world and the world of images vary according to time and place.

ANIMALS AND SYMBOLS

The figurative representations of animals in Syro-Palestinian art did not make clear distinctions between real and invented creatures. Animals were very much present in the imagination as well as in everyday life. The boundary we draw between the two was unknown or blurred in the minds of the people of antiquity whose everyday life indissolubly combined subsistence activities, social rites and appearances of the divine. The bestiary of works of art drew either on normal life and husbandry or on disquieting creatures from the wild, often seen as manifestations of the divine.

When attempting to "read" images of animals, we have to be aware that they are the product of the minds of the artists who endeavored to convey their visions. This vision has been shaped in their minds by many different factors, including morality, religion, and psychology, as well as by traditional techniques and training.

ANIMALS AND SOCIETY

Figurative works of art are relatively scarce, reserved for the elites of society. Even so-called "popular" artifacts, such as terracotta figurines, are rarely encountered in village contexts and come from specialized workshops attached to sanctuaries and large urban centers. Works of art therefore illuminate only a limited part of the society and culture of Syro-Palestine. As in the rest of the Near East, information from images must be verified by comparing them with bone remains, reflecting the actual presence of animals in the food chain, in the domestic or wild environment, or in religious life through the remains of sacrifices and ritual meals.

TIME AND SPACE

The bestiary varied according to time and place. The human relationship with animals was not the same on the coast as in the Syrian hinterland, in the north or the south, or in the Neolithic, Bronze Age or first millennium B.C. Great changes can be seen especially at the end of the second millennium B.C. in the south, when the Philistines introduced closer contacts with the Aegean world and Cyprus. This study will select its examples from periods that saw the development of an international palatial civilization whose elites shared the same ideologies. From the Middle Bronze Age to the Assyrian and Persian periods, in spite of many historical upheavals, a certain continuity in the configuration of a society made up of many small kingdoms favored a cultural and iconographic continuity that is particularly noticeable in the imagery of animals.

MEDIUM OF REPRESENTATION

The types of objects or monuments that served as the medium for figurative representations of animals instantly show the link that attached the latter to the higher levels of the social hierarchy or the divine world.

Monumental Architecture

Images can form part of the decoration of monumental and official architecture, of which the few extant remains are sufficient to show the symbolic nature of their presence. The lions in high relief at Hazor, guardians of the entrance gate into the temple (Stern *et al.* 1993, 2: 598 s.v. Hazor), or the lions' heads on the city wall at Byblos (Jidejian 2000: 173) of the Persian period signal to the visitors on arrival that they are entering a territory governed by the power of the king. This concept was adopted by the Neo-Assyrian kings who gave it an even more monumental expression. The reliefs at Beth Shean showing two scenes in which lions and dogs confront each other (Stern *et al.* 1993, 1: 216 s.v. Beth Shean) are part of an element of a city gate and probably had the same symbolism. The lion is also present in small scale architecture such as sarcophagi and chests that represent actual buildings in reduced size. They indicate that the association of the lion with architecture must have been more common than the few remaining examples would have us believe. Thus the sarcophagus of Ahiram, king of Byblos, is guarded by four crouching lions sculpted in low relief on the side of the coffin with their heads completely free-standing in the round (Jidejian 2000: 40–42). A similar composition can be seen on some caskets made like miniature monuments, and even on cosmetic boxes, such as those from Megiddo (Barnett 1982: pl. 17 a–b) in the Late Bronze Age and from Nimrud in the Iron Age (Catalog 1985: no. 181), produced in Syro-Palestinian workshops. Figurative wall paintings are even rarer outside Egypt (Bietak 1999) and the Aegean. The few examples from Alalakh or Tell Kabri, such as they appear following a recent re-examination, came from a palatial context, and their imagery, perhaps of Aegean inspiration, introduced the idea of "noble" animals (Niemeier 1991: 188–201).

Statues and Stelae

Statues and stelae, both connected to the cult and royal power, are also scarce. Alongside stelae of Egyptian manufacture, whose imagery is directly derived from Egypt, as for example at Beth Shean, local stelae often show a lion associated with a deity (fig. 6.1).

Fig. 6.1. Stone stela from the vicinity of Amrit (Syria) showing a storm god mastering a small lion and perched above a lion striding over mountains. AO 22247. Ca. 750–650 B.C. Photo courtesy Musée du Louvre.

Figurines

Figurines offer much more abundant evidence. Clay and bone figurines appeared early in the Neolithic period and animal representations are frequent among them. The clay bull figurines from the PPNB site at 'Ain Ghazal were pierced by flint blades, an indication of the magic rituals of the hunters. Clay and terracotta figurines were to become one of the major expressions of "popular beliefs," throughout antiquity, while metal figurines are among the specialties of the Levantine artists working for the elite. It is interesting to compare the repertoire of metal figurines, necessarily costly to produce, with that of inexpensively produced terracottas. Whether the figurines came from domestic cults, offerings in sanctuaries or funerary assemblages, they established a social hierarchy. The repertoire of the metal figurines is relatively limited. In addition to deities, notably the smiting god, there are images of young bulls, the animal attribute of the storm god and the incarnation of the "Golden Calf" of the Bible. The metal is generally bronze, often covered with gold or silver leaf as shown on examples from Ashkelon (fig. 6.2) or Ugarit (Schaeffer 1961/62: fig. 6), which made the statuette more opulent. Snakes (Stern *et al.* 1993, 3: 1032 s.v. tel Mevorakh) and falcons (Schaeffer 1929: pl. LII), the Egyptian symbols of royalty, are also found, although more rarely. The repertoire of terracotta figurines is even less varied. The great majority show either the "naked goddess," or the bull, and sometimes a ram. The storm god, so popular in metal statuettes, almost never appears in its anthropomorphic guise in coroplastic art, probably because it already appears in its theriomorphic form, the bull. Some figurines show a male figure perched on a bull or ram (Badre 1980: pl. XVI) and on chariots led by cattle. Throughout the Bronze Age, these hand-modeled figurines were very common in the Syrian hinterland, in the Khabur region, and along the Orontes and the Euphrates. Around the end of the second millennium B.C. figurines of horses began to appear in coastal sites. Throughout the first millennium B.C. and until the hellenization of the Orient, the horse, sometimes replaced in inland regions by the camel, became the most frequent expression of popular beliefs through the medium of terracotta figurines (Catalog 1987: nos. 137–39).

Fig. 6.2. Bronze figurine of a young bull with remnants of silver leaf. From Ashkelon. Middle Bronze Age. Photo courtesy Ashkelon Excavations.

Cultic Implements

Animals are much in evidence in cultic implements and paraphernalia. Pottery altars, offering-stands, composite vases, rhyta and wall-brackets often bear painted, applied or incised ornaments. In some instances, animals are grouped in pairs of lions, bovines, cervids and horses. Birds and snakes are associated with the "naked goddess" and the stylized tree (Stern *et al.* 1993, 1: 217 s.v. Beth Shean, 1993, 3: 1432 s.v. Taanach; see also fig. 15.1 here).

Glyptic

Seals, cylinder seals, and their impressions are the main source of ancient Near Eastern imagery and on them animals occupy an important position (Collon 1975: *passim*). The use of these commercial and administrative tools spread from Mesopotamia to the Levant, which developed its own repertoire during the second and first millennia B.C. Seals tended to be limited to the higher levels of society and thus reflect their ideologies.

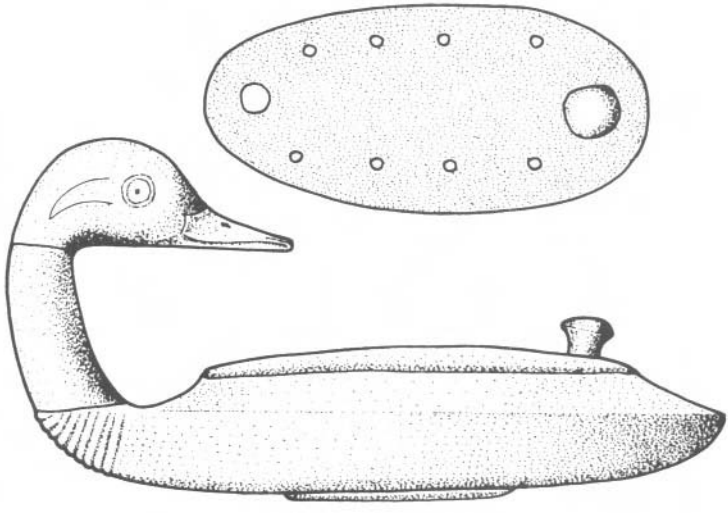

Fig. 6.3. Duck-shaped cosmetic box from a tomb at Minet el-Beida, ancient harbor of Ugarit. Hippopotamus ivory. AO 14779. Ca. 1200 B.C. Drawing by J.-P. Lange. Courtesy Musée du Louvre.

Personal Items

Animals are also present on many objects of personal use, such as furniture (Jidejian 2000: 168 top left), caskets, containers, jewelry and cosmetic items. These were mostly luxury goods belonging to the elites if not to the royal families themselves. These artifacts, made of valuable or exotic raw materials such as faience, ivory, wood or precious metals, are found in wealthy contexts in palaces, rich houses and graves or in sanctuaries. Some, especially jewelry and toiletries, such as a duck-shaped ivory cosmetic box from Minet el-Beida, have distinctly female associations (fig. 6.3).

THE ANIMAL AS MOTIF

Some species are very common in the imagery while others are much rarer, although the ratio has little to do with the actual fauna. There was certainly an imaginary bestiary that was distinct from the reality of nature. It is not possible to follow here the conventional distinction between wild and domesticated species. Since caprids and ovines often appear in scenes that give no clue as to whether they belong

to wild or domesticated species, while composite, invented creatures are mixed with real ones, it is necessary therefore to use other categories.

Animals Close to Humans

In contrast to Egypt, which gave the cat special status in art and religion, the Levantine artists all but ignored the cat (and the mouse) in their imagery, even though these two animals are present in the bone remains. The rare exceptions are probably due to Egyptian influence (Jidejian 2000: 56 bottom; Stern *et al.* 1993, 1: 33 s.v. Achziv). This is noteworthy since the near absence of the cat is surprising in a society based on agriculture and therefore certainly anxious to preserve its harvests from rodents.

Another animal that is very close to humans and well-attested in bone remains is the dog, which, surprisingly, is rarely represented. The dog was the hunter's companion and sometimes the lion's adversary (Stern *et al.* 1993, 1: 216 s.v. Beth Shean), and if the hunter was of royal blood, as on a gold cup from Ugarit (fig. 6.4), some of its master's prestige reflected on it.

Around the beginning of the second millennium B.C. the "real" horse replaced the small equids of the previous periods. It is depicted harnessed to the royal chariot on many cylinder seals (fig. 6.5) and on the furniture from palaces (Stern *et al.* 1993, 3: 1012 s.v. Megiddo), all these representations being evidence of its prestigious nature. In contrast to the images of slow moving Mesopotamian donkeys and onagers in the third millennium B.C., these scenes put the emphasis on equine speed, always represented at a gallop (Amiet 1992: nos. 301–310). This "flying gallop" demonstrated the mastery and courage of the driver (fig. 6.4). At the same time as the horse evolved from draft animal to a mount near the end of the second millennium B.C., the imagery of the horse also gradually changed. When mounted, it formed a single body with his rider, earning it the status of man's close companion. A hybrid creature, half man half horse, which epitomises the unity of the rider and mount, appeared thoughout the Mediterranean world in Greece, Cyprus and the Levant. The horse also made its appearance in the imaginary bestiary. Like the Greek Pegasus, it is often fitted with a pair of wings (Porada 1948: pl. LXXXIX 620; Matthews 1990: no. 399). The horse is seen alongside a bird and a fish (Yon 1997: no 35) in a complex scene

Fig. 6.4. Gold cup discovered in 1933 on the Acropolis at Ugarit. The individual in the chariot is probably royal, and demonstrates his prowess in the hunt, with wild goats and a family of bovines as his prey. Ca. 1200 B.C. AO 17208. D. 18 cm. Photo courtesy Musée du Louvre.

Fig. 6.5. Cylinder seal from Ugarit, excavated in 1932 at Minet el-Beida. A "royal hunter" drives his chariot with the reins around his waist while shooting at a lion and trampling a vanquished enemy. A dominating falcon and a vulture survey the scene. AO 15772. Ca. 1200 B.C. Courtesy Musée du Louvre.

following a worshiper in front of an enthroned deity. The horse also appears on cultic objects used in rituals, such as rhyta (Murray, Smith, and Walters 1900: pl III). Finally, either alone or with rider, it became the subject of innumerable terracotta figurines deposited in the sanctuaries of warrior gods, thereby gradually taking the place of the very ancient image of the bull, the animal attribute of the storm god. The horse is a synonym of speed and ardour and is always shown in motion. The galloping posture, more difficult to show in the round than in a relief or a painting, remains perceptible in the figurine by the diverging oblique stance of the legs. The donkey, a humble beast of burden in the entire Levant, but essential to caravan transport before the domestication of the dromedary camel, acquired the status of a noble mount during the Bronze Age. As early as the Middle Bronze Age, it was ridden by royal hunters in bronze figurines (Ziffer 1990: 81, fig. 88), and appears on the sheath of a dagger from Byblos (Jidejian 2000: 48, 49 bottom)

Cattle, Sheep and Goats

In the imaginary bestiary of the Levant, the bull held a preeminent position. It was even more important than the cow, which is shown tenderly licking the calf she is feeding in an unambiguous analogy to animal, human and divine motherhood (fig. 6.6). As indicated by the texts and by statues of deities, the bull was clearly associated with the storm god. It was both his mount and his substitute, and its bellowing was a metaphor for the roll of thunder. Thus the nature of the bull in art—animal or divine, wild or domesticated—is always ambiguous. It is often represented in a wild context, hunted (Mallowan 1966, 2: no. 385), attacked by lions (Mallowan 1966, 2: nos. 416–417) or by mythical creatures such as the griffin (Jidejian 2000: 42 top). The Ugarit gold cup (fig. 6.4) is a good example of the different possible readings of the representation: A hunter in a chariot, probably a royal hunter, is shooting arrows at a "flying" goat and a herd of bovids comprising an old and massive male, a younger, faster and more slender bull, and a cow with her calf. Is this the depiction of a real hunt? That would presuppose that aurochs, the wild bulls, still existed in northern Levant at the end of the second millennium B.C., unless the scene takes place in one of the "paradises," i.e., parks artificially populated by exotic animals for the entertainment of kings, which were well-known at Mari at the

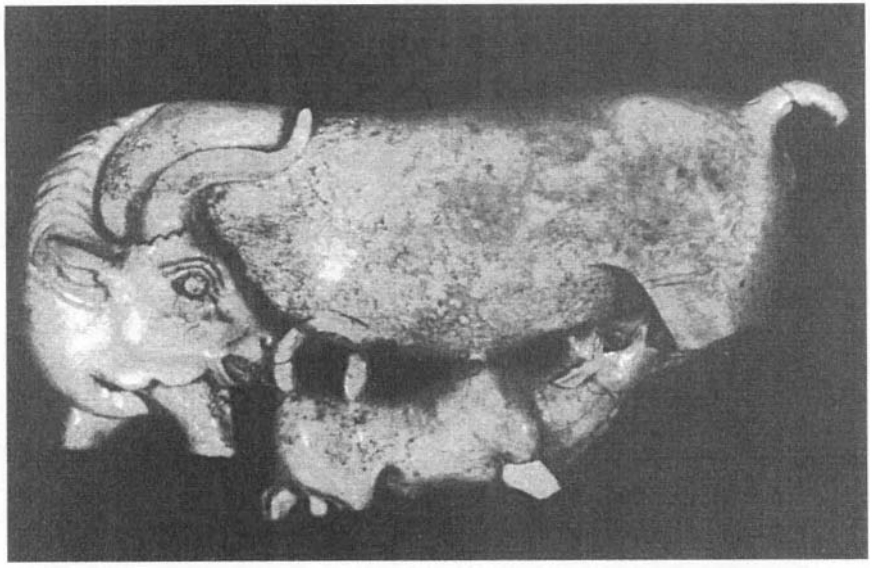

Fig. 6.6. Ivory carving of cow suckling her calf used on decorated furniture. Arslantash. 9th Century. H. 5.8 cm. Aleppo Museum.

beginning of the second millennium B.C. and in Assyria later. But it is possible that the zoomorphic figures on the gold cup also represent divinities from the Ugaritic mythological epics, including the elderly god El, the young Baal and possibly the "heifer" Anat.

As in the rest of the ancient Near East, caprids (sheep and goats) possessed a symbolic value. They symbolized fertility and wealth, signs that the gods were favorable. They could sometimes even represent the gods if the latter wished to appear before humans in their theriomorphic form.

Images of goats are common but not nearly as frequent as might be expected given the importance of this species in the economy of the Levant since the Neolithic. The picture is complicated by the fact that it is difficult to differentiate between the wild and domesticated varieties of goats in the art thus, perhaps artificially, minimizing the role of the domestic goat in the iconography. Artists stress the independent and adventurous nature of the goat. It is depicted rearing up, often vis-à-vis confronting each other or nibbling the buds of a stylized tree (Collon 1975: no. 224; Mallowan 1966, 2: fig. 464).

Parades of animals, a favorite decorative composition of Mesopotamian artists, are also common in the imagery of the Levant.

Rows of pacific animals, whether attacked or not by wild beasts, group together (or in the same attitude) different species of horned animals such as goats, sheep, gazelles and deer. The combination of wild and domestic(?) species in such groupings further suggests that the wild/domestic distinction is no more relevant for sheep and goats than it is for cattle (see, e.g., Yon 1997: no. 56; Jidejian 2000: 49; Mallowan 1966, 2: 464, 471). Is the mythological theme of the Master or Mistress of Animals, which is widespread in antiquity and well-attested in the Levant, connected to an environment of wild nature or to domestication and husbandry? Such a "goddess," mastering goats on the lid of a cosmetic box from Ugarit, is standing on a stylized scaled design, which is usually considered to represent mountains, and indicates that the scene is set in the wilderness (Barnett 1982: pl. 24b; Yon 1997: back cover). She coaxes them with ears of wheat, a symbol of agriculture and of the mastery of humans over their natural environment. The goddess with the goats also appears on jewels and feminine objects such as gold pendants where she is naked, riding a lion and brandishing snakes and small caprids (Yon 1997: no. 58).

The ram, which seems to be the equivalent of the bull in its role as a reproducer, is popular among terracotta figurines and vessels, and a wooden flat dish from a tomb at Jericho (Ziffer 1998: 30, fig. 28) is decorated with four protruding rams heads. A cup in the shape of a ram's head appears in the drinking set of a Middle Bronze age tomb of a warrior (tomb 9), also from Jericho (Ziffer 1998: 120, fig. 135). The ram may also figure among the personal belongings of women: Rams' head-shaped rhyta in faience appear alongside rhyta in the shape of females' or horses' heads during the Late Bronze Age.

Without going into the question of the ban on the eating of pork, it is noticeable that the wild boar is attested, albeit rarely, in works of art (see, e.g., Woolley 1955: pl. XLV). Considered unclean in a number of Near Eastern countries, at least in historical periods, the pig is a noble animal in Europe, the Balkans, and the Mycenaean world. It is probably from there that they came into Syria. Like the elephant and the hippopotamus, the boar was a source of ivory destined for prestigious works of art. Part of that prestige reflects on the living animal.

The Lion

Among images of wild animals and perhaps among images of all animals, the lion is the most common. This contrasts sharply with its very limited presence in the remains of the actual fauna. The image and the myth of the lion go well beyond that reality. The lion is almost the only animal represented in official monumental architecture, at the gates of cities and temples. It frequently occurs on luxury objects or cult furniture. Calm or combative, whether making a show of strength or not, only the male lion is represented, never the female or the cubs, although in nature it is normally the lionness that hunts. Artists in the Levant, like those in Mesopotamia, limited their depiction of the species to the image of the triumphant male, characterized by its thick mane. Depending on its position in the figurative scenes, the lion symbolized the equivalence between the king of animals and the earthly king, which was asserted at the city gate. Alternatively, it is the adversary of the royal power. The lion is thus engaged in combat against a human being, the so-called hero (Collon 1975: pl. XXXVIII) sometimes in the midst of pacific parading animals.These scenes can be read as cosmic battles between the hero, a mythical royal ancestor, and the lion, the embodiment of the forces of the wild that threaten cattle. The lion also attacks wild animals, such as deer and gazelles, which it always dominates. The frequent combat scenes between the lion and the bull again emphasize the ambiguity of the status of these animals, linked as they are to the concept of kingship and to the storm god.

Parts of the lion's body, such as the head and paws, were placed in the anatomically appropriate position on everyday objects like caskets, beds and chairs, with the functional object itself serving as the animal's body. The result is a sort of metaphorical lion, no longer an inanimate object but the image of a living creature. Egyptian influence is obvious in furniture (Jidejian 2000: 168; Yon 1997: no. 13), such as thrones or beds, but the Levantine tradition asserts itself in architectural reproductions such as sarcophagi or caskets. In both cases the royal connotations are strong, as much in the nature of the objects as in the ideology they express.

The Elephant, Hippopotamus and Crocodile

Texts, bone remains and ivory work all testify to the presence of these large animals in nature, in the Syrian hinterland in the case of the

elephant, and in the swampy river mouths of the Palestinian coast for the hippopotamus and the crocodile. If we compare the figures given by the Pharaoh Tuthmosis III (1470–1439 B.C.), who claims to have hunted 120 elephants in the lake near Homs, with the letters from Mari (ca. 1800–1750 B.C.), which make an isolated reference to a lionness captured for the royal park, elephants and hippopotami were certainly more common than the lion, at least during the second millennium B.C. The ivory carvers of the second and first millennia B.C. knew how to make masterful use of the tusks of the elephant and the canines and incisors of the hippopotamus, perhaps without establishing the relationship between the inert material and the living animal that supplied it. Despite their impressive appearance, these animals were never favorites of Oriental artists. No indisputable figurative representation is attested from Syria, Palestine or the entire Near East until the Assyrian period, as on the black obelisk of Shalmaneser III (858–824 B.C.). There the artist who represented a baby elephant brought as tribute from Egypt seems to have worked more from textual descriptions than from an actual model. While images of the hippopotamus are very popular in Egypt, they appear in the Levant only on imported Egyptian artifacts, for example on faiences from Byblos (Jidejian 2000: 55).

Hippopotami and crocodiles shared a similar habitat in the swamps of the Palestinian coast. Crocodiles are absent from the local imagery, as are hippopotami. They may have inspired the biblical monsters of Leviathan and Behemoth.

"Inferior" Animals

Amongst crawling creatures linked to the underground and still waters, snakes, scorpions and tortoises are to be found in a great number of images, especially in glyptic art. They are generally associated with other divine or animal figures. On pottery cult stands and jewelery pendants, the snake is associated with the naked goddess, which may be compared to the Cretan goddess brandishing snakes. Through the goddess, the snake becomes connected with the bird, its aerial opposite, and with the lion, the attribute of the goddess of sexuality, as on gold pendants from Ugarit (Yon 1997: no. 58). Figurines of snakes in precious metal were placed in sanctuaries (Stern *et al.* 1993, 3: 1032 s.v. Tel Mevorakh).

The cobra, the Egyptian uraeus, was adopted as a royal emblem

in the Levant. It is depicted on jewelery in the princely graves at Byblos from the Middle Kingdom, and in Cyprus and Phoenicia. It is used during the Persian period to decorate door lintels in monumental architecture, or is represented on the Egyptian style loincloths of dignitaries.

Among flying creatures, the grasshopper appears on an ivory figurine from Kamid el Loz, undoubtedly of Egyptian inspiration (Hachman 1983: no. 4; Miron 1990: pls. 39, 63). Flies, although very frequent not only in the real world but also in the images of Sumerian Mesopotamia or at Mari, are seldom represented in Syria-Palestine, with a few exceptions, such as on Middle Bronze Age jewelery from Ajjul (Catalog 1986: 123, fig. 52).

Aquatic Fauna

Fish, frogs and turtles appear as fill-in elements in Syrian glyptic as well as on some painted vases at Megiddo and Ugarit. As in Mesopotamia, they seem linked to the powers of the underworld, underground waters, springs and rivers, in the same way as the snake. In contrast to Cretan and Mycenaean art, where maritime fauna such as the octopus and shells figure prominently, they are little represented in local Levantine art, although the sea-fishing industry is well-attested. The imagery seems to ignore the Mediterranean sea, turning its back on it, thereby following Ugaritic mythology in which the sea is a hostile, sterile element as opposed to the beneficial rain waters embodied by the god Baal.

Aerial Fauna

The aerial fauna are divided between birds of prey and pacific, harmless birds, notably the duck (Caubet and Poplin 1987: 280; Barnett 1982: pl. 23c; Miron 1990: 115–18) and the dove. The latter and its opposite, the snake, are pointers to the goddess of love. Eagles and falcons hark back to the warring gods whose celestial character is evoked by these winged creatures of "lightning" speed, which provides another "storm" metaphor. Falcons and various birds of prey are frequent in the Levant, but their images show a strong inspiration from Egypt's royal ideology: Metal figurines of the falcon bearing a royal crown are found in religious context (Schaeffer 1929: pl. LII; Schaeffer 1939: 35, fig. 24). In some composite scenes, a bird

in flight with the long wings of a bird of prey is soaring above the chariot of a royal hunter or warring sovereign (fig. 6.5; Markoe 1985: nos. E2, E6, E8, E9, E13; Caubet *et al.* 1992: no. 82). The eagle, attribute of the celestial god of the Arabo-Syrian hinterland, which is attested on the monuments of Medain Saleh, Petra, the Hauran and Palmyra, was easily assimilated at the end of the first millennium B.C. to the bird of the Greek Zeus and Latin Jupiter.

The ostrich, which until recently populated the Syrian hinterland, is frequently mentioned in texts, at Mari, and in Assyrian letters. Because of its speed, it is a difficult animal to hunt making it a noble quarry worthy of a king. Its feathers and skin were much sought after, its enormous eggs were consumed, and the shells were used to make decorated containers (see below). However, the image of the ostrich is rare prior to the first millennium B.C. (Mallowan 1966, 1: fig. 61; Porada 1948: fig. 606E).

The innovation of adding large swans' or eagles' wings to human- or animal-shaped creatures that lacked them in nature seems to have its roots in the Syro-Palestinian region. Such a creature, a winged goddess, suckles two young boys on a decorated ivory bed from Ugarit in fig. 6.7b. The bird's wings probably conveyed an impression of ethereal lightness and speed, which brought to mind the breath of the spirit, mostly divine. This same association of ideas may help explain how the winged disc became the symbol of the divine spirit in the scenes where it dominates.

Foreign Bestiaries

The impact of Egyptian imagery in the Levant can be seen mainly in the imaginary bestiary illustrated by the sphinx, although many "real" animals present in the Levant are depicted in Egyptian style, on imported objects or their local imitations: scarabs of faience or precious stones, and falcons on Egyptian jewelry such as the gold pectoral from Byblos (Jidejian 2000: 31). Monkeys and baboons are exotic animals and appear on alabaster vases and figurines (Jidejian 2000: 155 upper right), and on the sheath of the Byblos dagger (Jidejian 2000: 49).

The bestiary of Aegean origin, which is not as common, consists mostly of the octopus and nautilus. It is found almost exclusively on imported artifacts, mainly painted ceramics from Crete or continental Greece found in sites on the coast, for example the octopus rhyton

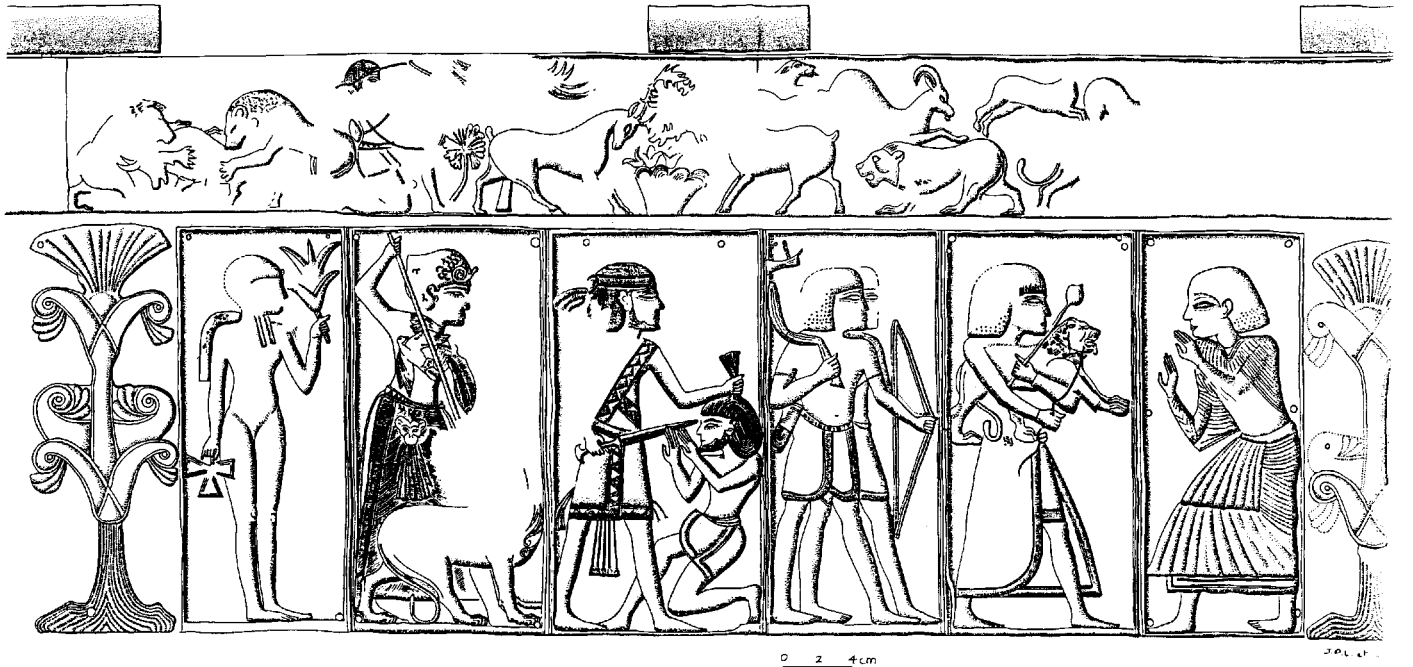

Fig. 6.7a. Two sides of bed panel carved in ivory from the royal palace at Ugarit: a) king in war and hunt; b) activities of royal couple. Ca. 1200 B.C. Damascus Museum. From Yon (1997: no. 21). Drawing by J.-P. Lange. Courtesy Mission archéologique de Ras Shamra and Musée du Louvre.

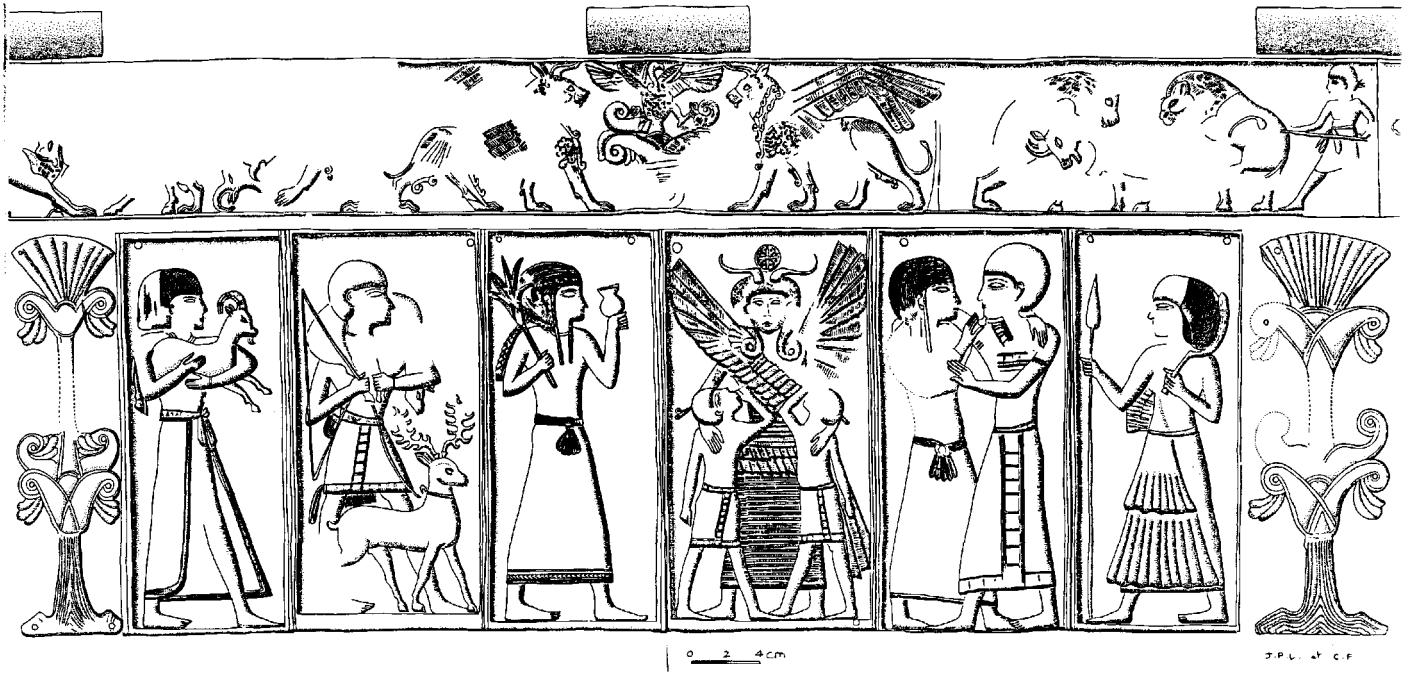

Fig. 6.7b. Two sides of bed panel carved in ivory from the royal palace at Ugarit: a) king in war and hunt; b) activities of royal couple. Ca. 1200 B.C. Damascus Museum. From Yon (1997: no. 21). Drawing by J.-P. Lange. Courtesy Mission archéologique de Ras Shamra and Musée du Louvre.

from Ugarit (Yon 1997: no. 37). There is little doubt however that these vases were made to order for the Levantine clientele, who were interested as much in the quality and utility of these vases as in their iconography. To judge by the distribution of finds, Mycenaean craters decorated with scenes of horse-drawn chariots were nearly all made for export to the Levant where the motif of the royal hunter in a chariot would have been familiar.

Mesopotamian influence is not as easily identifiable since the cultures of Syria and Mesopotamia are intimately linked. It is often difficult to tell in which direction the inspiration went. The same phenomena, such as the importance of the lion and the bull or the association of different species (always the same ones), can be observed. Mesopotamian/Levantine interaction is also most obvious in the imaginary bestiary. Although certain mythological creatures, such as the bull-man, are clearly of Mesopotamian origin, we know neither where nor how other composite monsters, such as the lion-griffin or the winged griffin, evolved.

The Imaginary Bestiary

No strict distinction was made between real animals and those that do not exist in nature. Imagery indiscriminately puts them together in the same scenes and has them live and fight side by side, a fact that emphasizes the symbolic nature of the animal in art.

Foreign influence was particularly at work in the mythological realm. Egyptian culture, which is strongly reflected, made itself felt in the frequent presence of the sphinx or the winged griffin, also known in the Aegean world. The pregnant hippopotamus goddess, combined with a crocodile on her back and a lion's head, underwent, by means that are difficult to follow, a transmogrification from Egypt to Crete to end up as the "Minoan genius," which is also attested at certain Palestinian sites on scarabs or ivory plaques in Palestine, for instance, at El Jisr (Keel 1993: 208–12). The griffin with anthropomorphic body and bird of prey head (Mallowan 1966, 2: figs. 383, 575) is probably of north Syrian origin, while the lion-griffin with the body of a lion may be found in the Aegean and Egypt (Mallowan 1966, 2: figs. 455, 456). Mesopotamian influence, spread throughout the Syro-Palestinian bestiary, is obvious in the case of the human bull depicted on cylinder seals (Amiet 1992: no. 51) and on the handle of a Byblos gold dagger (Jidejian 2000: 50, right). All

these fantastic creatures were adapted and transformed for and by local tastes, while often retaining the royal or religious symbolism that they had at their origin.

The Levant was the main center for the invention of winged creatures, making a metaphor out of bird's wings to evoke the essence of air, therefore the spirit and the divine. Sphinxes, griffins, bulls, horses and anthropomorphic deities with large wings are one of the richest inheritances from the culture of Syria-Palestine of the Bronze Age. This inheritance was transmitted to the great empires of Mesopotamia, Persia and finally the Greek world.

THE COMPOSITION OF FIGURATIVE SCENES

The number, nature and the attitude of the animals represented depend largely on the medium of the works and the composition of the scene. Isolated images, in two or three dimensions, gave greater importance to noble species such as the lion, the bull, the caprid and, in the first millennium B.C., the horse. These noble species were also the subjects of symmetrical compositions associating two figures, with or without a central element, generally a sacred tree. In complex scenes, a greater variety in the animal repertory and significant association of different species are encountered. These scenes, whether painted, sculpted or engraved, are found on cylinder seals, wall reliefs, wood and ivory furniture, ceramic objects, and metal vases. With their continuously unfolding scenes, cylinder seals in particular are used for narrative reliefs. These can also be seen on some luxury artifacts such as the gold hunting plate from Ugarit (fig. 6.4), the ivory bed from Ugarit (fig. 6.7), an engraved ivory plaque from Megiddo (Barnett 1982: pl. 19a; Stern *et al.* 1993, 3: 1015 s.v. Megiddo), or the ivory gaming box from Enkomi (Barnett 1982: pl. 30d). In the first millennium B.C., silver and gold Phoenician bowls depicted whole stories showing the sovereign leaving the city in his chariot, the journey to the Cedar Forest and the battle with the demon Humbaba, moments in the royal hunt and the return with the game (Markoe 1985: no. E2). All these epic tales intricately link humans and animals.

Associations of animals belonging to different species follow the rules relating to the similar or opposite characters of these different creatures. Thus parades of animals line up pacific creatures, such

as cattle, ovines and caprids and cervids, or conversely, awesome creatures, like felines, mythological monsters and anthropomorphic heroes. These two categories, pacific or belligerent, meet in battle scenes in which they are matched in groups of two or three (Barnett 1982: pl. 24a; Jidejian 2000: 42 top). The repetition of motifs gives the impression of a never ending story, that of contrary forces opposed in an eternal battle essential to the balance of the world. The landscape is marked by the stylized tree, the image of the perfect harmony of Creation. Duels between an animal (real or imagined) and the hero, the Master or Mistress of Animals (frequent on ivory and cylinders-seals), present analogous compositions and probably reflect the same ideology with an added royal connotation linked to the character of the hero, the mythical ancestor of the dynasty.

The frequent association of opposed elements in groups of three—bull/snake/bird, or lion/bull/caprid or snake/bird/goddess—is worth noting. The components of these groups are not necessarily fighting, but rather complement each other. The bird in the air is the counterpart of the crawling snake; the ferocious lion, attribute and mount of the goddess, complements the pacific caprid or the domestic bull, also considered the attribute of the storm god, who is the counterpart of the goddess. This sequence of associations reveals the complementarity essential to the balance of nature, in an elaborate concept that interlocks sexuality and combativeness, the underground journey of the dead and promises of renewal, nature wild or mastered by humans and civilization.

In this cosmic imagery occur scenes exalting the virtues of the sovereign. Hunting and war are an opportunity to show off his bravery, his strength and his skill. The sovereign almost never appears without an animal, whether as his companion, his mount, or his adversary.

Finally, animals appear in scenes of cultic activities, as an attribute or mount of the deity, as the symbol of nature and its elements (e.g., on a painted vase from Ugarit [Yon 1997: no. no. 35]) or as an offering.

ANIMAL MATERIALS

Animals provided raw materials used by humans for making tools and artifacts. What have survived are mainly hard materials such

as bones of wild or domestic animals, horns and antlers, elephant and hippopotamus ivory, eggshells (especially ostrich), turtle shells, and marine shells. Human exploitation of these materials goes back to the traditions of Paleolithic hunters. Some of these hard animal materials were used in a remarkable way in the Levant.

Ostrich Eggshells

Until recently, ostriches were plentiful in the Syro-Mesopotamian hinterland. Feathers were used to make plumes, fly swatters and varied trimmings, and the skin yielded quality leather. The egg, one of the largest birds' eggs known, stimulated the imagination. Eggshells, decorated or not (Caubet 1983), were placed in a number of graves in Mesopotamia, Palestine, the Syrian coast and Cyprus. They had a symbolic significance connected with fertility and the hope of rebirth and survival.

Marine Shells

As early as the Neolithic PPNB in the eighth millennium B.C., an important shell industry appeared in the Jordan valley (Caubet and Poplin 1995: *passim*). Personal ornaments in the form of rings, triangular "sequins" and perforated discs were made of marine shells from the Red Sea or the Mediterranean. In the same period, famous for its spectacular funerary practices, some of the plastered skulls from Jericho and 'Ain Ghazal have eyes of cowry shells from the Red Sea(?), and some of the plaster statues have eyes made from clams.

During the first millennium B.C., Phoenician workshops made use of the *tridacna squamosa,* a huge shell imported from the Arabo-Persian Gulf and the Indian Ocean. The hinge was sculpted in the form of a human head and the internal and external surfaces were carefully polished and engraved with winged genii and stylized trees.

Elephant and Hippopotamus Ivory

From ancient times Asian elephants may have lived in the Syrian hinterland. However, elephant ivory artifacts are rare in the Levant before the first millennium B.C. This ivory, which because of the animal's size and the social status of the owner, seems to have been

reserved for exceptional works, was probably imported from Africa via Egypt and the cities of the Levantine coast (Caubet and Poplin 1987; 1992).

Hippopotamus ivory artifacts, on the other hand, appear in the Levant as early as the fourth millennium B.C. The lower canines are curved with triangular sections and can reach sizes of up to 30 to 40 cm. The four lower incisors, straight with a circular section, also furnish a sizeable amount of ivory.

The earliest hippopotamus ivory artifacts appear during the Chalcolithic period in the Negev and the Judean desert near the Dead Sea. Among these, the anthropomorphic figures are closely related to predynastic Egyptian art. Elephant ivory, although rare, is also used to make cylindrical containers.

During the Early Bronze Age (third millennium B.C.) ivory bull and lion heads carved in the round came out of Palestinian workshops at Jericho, Ai, Arad and Khirbet Kerak. These hippopotamus ivory works seem to have been inspired by Sumerian stone sculpture. During the Middle Bronze Age, bone and ivory were used to make small furniture veneers at Lachish, El Jisr, Megiddo, Jericho, and Amman. This technique was perhaps inspired by Sumerian shell mosaics.

In the last phase of the Late Bronze Age, from the end of fourteenth to the beginning of the twelfth century B.C., a superb ivory industry emerged as part of the palatial civilisation that evolved along the Levantine coast and in Cyprus. Ugarit, Megiddo, Lachish and Kamid el Loz have yielded masterpieces. Remains of debitage indicate local production. This industry is characterized by the predominant use of hippopotamus ivory epitomized in the duck-shaped cosmetic box that makes the most of the complex shape of the lower canine. Larger pieces, such as a horn or trumpet (Yon 1977: fig. 23) and the foot rest of a bed with figurative relief decoration at Ugarit (fig. 6.8), were carved from elephant tusks in such a way as not to waste this scarce raw material. Narrow rectangular boards were cut from the solid part of the tusk while cylindrical cosmetic boxes were taken from the hollow part of the tusk where the pulp chamber is. Circular lids were, like the rectangular boards, sawed vertically from the solid part of the tusk.

At the end of the Late Bronze Age, around the twelfth to eleventh centuries B.C., the raids of the Sea Peoples led to the collapse of the palatial civilization and the disappearance of the

royal courts that were the customers for ivory objects. From the tenth century B.C. onwards, the rise of the Phoenician, Aramaean and Cypriot kingdoms caused a revival in luxury objects. Henceforth ivory working was done solely using elephant ivory, which was imported in large quantities from Africa to make furniture veneering, cosmetic dishes and mirrors. The imagery borrowed from Aramaean and Egyptian traditions. Royal treasures from the Levantine cities were progressively plundered and carried off to the palaces at Nimrud, Arslan Tash or Khorsabad during the Assyrian conquests of the ninth to seventh centuries B.C. Craftsmen were deported or transferred to the Assyrian palaces and in their turn produced works in the Assyrian style. Other workshops flourished in Iran, at Hasanlu and Ziwiye.

In the entire Near East, the ivory industry declined toward the end of the Assyrian period. There were many causes, including ecological transformations, changes in taste, diversions in the traffic of raw materials and the migration of workers to the Greek colonies. In the seventh to sixth centuries B.C. ivory workshops appeared in Asia Minor and the islands of the Mediterranean. From the Persian period onwards (sixth century B.C.) ivory was replaced in the Levant by bone, mostly sheep or goat metapods, to produce stylized figurines of naked women. These works were characterized by the homogeneity of their style, their distribution over a wide geographical area, which extended as far as Iran, and their longevity (they lasted until the rise of Islam).

CONCLUSION

The importance of the image of animals in the art of Syria-Palestine is due to the place they have in the ideology, as symbols of kingship or as representatives (or companions) of major deities. Statistics and the order or frequency of occurrence do not reflect environmental reality, where sheep and goats are less frequent than the lion, and composite monsters run alongside "real" animals. Foreign influence may be noted, with fantastic animals such as the sphinx borrowed from Egypt or the Bull-man taken from Mesopotamia, but on the whole, animal images in Syria-Palestine, especially during the second and first millennia, are distinctive in style, repertoire and medium of representation.

PART III

ANIMALS IN LITERATURE

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CHAPTER SEVEN

ANIMALS IN HITTITE LITERATURE

BILLIE JEAN COLLINS

Written documents first appear in Anatolia in the period of the Old Assyrian Colonies (ca. 1925–1650 B.C.). Assyrian merchants conducted business from trading colonies (*kārums*) located within the local Anatolian cities. The most famous of these centers, and the one from which most of the documents of the period come, is Kanesh (modern Kültepe). These documents are primarily commercial records and reveal little of the society of Anatolia in the Middle Bronze Age. When the Hittite Kingdom of central Anatolia implemented a tradition of record keeping under the rule of King Hattušili I (ca. 1650–1620 B.C.), it utilized not the script of the Assyrian merchants but that of its neighbors in northern Syria. Over the course of the next 475 years, Hittite scribes recorded historical, diplomatic, religious and lexicographic materials, little of which can be considered literature in the sense of having as their primary characteristic an "excellence of form and expression" (Websters), but that nevertheless reveal a rich and diverse symbolic world in which animals have a central role. In this body of literature, animals are a frequent source of imagery and symbolism, getting the point across clearly and eloquently because they tap into the culture's common experience, triggering a socially imprinted response shared by the members of this agrarian/pastoral world.

SCHOLARSHIP

Lexicography

The Hittites borrowed the genre of lexicographic texts from Mesopotamia. Of the surviving examples, two list animal vocabulary. The tiger, bison and aurochs would have no mention in Hittite documents were it not for the lexical list *KBo* 1.52. Another list (*KUB* 3.94) identifies a series of insect pests, including locusts, caterpillars, crickets and ants (Collins 1989: 281–82). The Hittite lexical documents further pre-

serve a basic distinction made in the Mesopotamian vocabularies, that between wild and domestic animals. This distinction is so fundamental and so pervasive that it provides the foundation upon which was built the symbolic world of the Hittites. In Hutuši's Ritual, the goddess Kamrušepa is said to purify a man's house and hearth, his land, cattle, sheep, personnel, piglets, and puppies (*KUB* 41.7 i 2'–7'; Collins 1989: 10). The two categories of animal that are part of the human realm, livestock and pets, are distinguished from one another in this list because one is perceived as "almost man" and the other as "almost thing." However, both are under the care of the householder, i.e., both pets and livestock form part of the social life of man. They are within his sphere of influence and control, which wild nature is not.

A further lexical distinction among categories of wild animals was made between *gimraš huitar* "animals of the field," i.e., wild land mammals, *daganzipaš huitar* "animals of the earth," primarily insects, and *arunaš huitar* "animals of the sea," which includes fish, frogs and snakes. Domestic livestock (including equids) were referred to as *šuppala-*, while the juxtaposition of the Sumerian signs GUD ("cattle") and UDU ("sheep") served as a merism for large and small cattle (Watkins 1979). The dog and pig are neither *šuppala-* nor *gimraš huitar*, but comprise a category all their own.

Divination

The observation of the behavior of certain animals was the subject of a large body of divinatory literature. Of the domesticates, the ubiquitous sheep was the favored animal for extispicy, the divinatory technique of choice. Among the wild animals, birds and snakes were the favorite subjects of the diviner's art. Oracle texts contain more than twenty percent of the attestations of snakes in Hittite sources. These snake oracles have survived in much smaller numbers than the bird oracles, and were probably used with proportionally less frequency. Due to their arcane vocabulary, they are poorly understood, but seem to involve interpreting the creature's movements with respect to its environment (e.g., water and earth). An assortment of snake species or varieties are used, but are identified by terminology that is so far largely incomprehensible to modern interpreters.[1] Augury is more commonly

[1] The most in-depth discussion of these texts may be found in Laroche (1958: 150–62).

attested, and, although also poorly understood, these texts seem to record the flight and movement of birds both in the wild and in captivity.

Insects figure prominently in Hittite omenology. Most of the Hittite terms for these creatures have not been identified with certainty, but the mere siting of such a creature was cause in some cases for an omen; more often the creature's movements were observed and interpreted. Insect pests were naturally of great concern for farmers: "[Wh]en in the eighth month from the fifteenth day the moon "dies," the rains will [oc]cur, the harvest will be good. The "[an]imals of the earth" will emerge and devour the grain, [and o]n his (own) land (a man) will become afraid" (*KUB* 8.1 iii 8–11; Collins 1989: 283).

Hippological Texts

Also educational, if not scholarly, in purpose, is the manual instructing with regard to the care and training of horses. Composed by a Mitannian named Kikkuli, this series of tablets describes in great detail the daily regimen of horses being maintained and trained for military use (Kammenhuber 1961; Starke 1995).

IMAGERY[2]

Much of the animal imagery found in Hittite written sources is attributable ultimately to King Ḫattušili I, whose early reign represents a literary high point for the Hittites (Collins 1998: 15). Upon announcing the deposing of his heir apparent, Hattušili I uses language rich in animal imagery to explain his decision:

> But he didn't accept the word of the king. He always took the advice of his mother, that snake. His brothers and sisters continually sent cool words to him, and he consistently listened to their words. I, the king, heard (of this), and I indeed quarrelled with him.
>
> "But Enough!" (I said). "He is no longer my son!" Whereupon his mother bellowed like an ox: "They have torn my bull-calf [from] my living womb, (as if I were) a cow, and they have deposed him. (And now) you will kill [him]!" But have I, the king, done him any evil? "Haven't I elevated him] to the priesthood? I have always singled him out for goodness and kindness. [Yet] he showed no sympathy when commanded by the king. How can he then show sympathy on his [own] toward Hattuša?
>
> His mother is a snake. Henceforth he will always heed (first) the

[2] Cf. Archi (1988) for a discussion of the symbolic role of animals.

> words of his mother, and of his brothers and sisters. And when he draws near, it will be to take vengeance that he approaches! (Beckman 2000: 79)

The snake as an the object of animosity and fear is well-attested in Hittite literature. In his Edict to his subjects, Hattušili I enjoins them literally to "keep the home fires burning" to prevent evil, symbolized by the snake, from entering Hattuša: "You will kindle fire on the hear[th]. But indeed you will not violate my words. If you do not kind[le] fire on the hearth, then it will happen (that) a snake will encircle [Ha]t[tuša]" (*KBo* 3.27 obv. 23'–27'). The hearth is a symbol of civilization and order, and if kept burning, will protect against external danger and disorder as embodied by the snake. Because of their frightening aspect, snakes were invoked in ritual incantations to frighten off other evils or evil intent: "Just as the snake does not [return to] (its) hole, let [the evil w]ord go back to the mouth of that one" (Collins 1989: 217). In addition, Hittite Law §170, generally taken to be a case against sorcery employing analogic magic, contains a stipulation that "if a free man kills a snake, and speaks another's name, he shall pay one mina of silver. If it is a slave, he himself shall be put to death" (Hoffner 1997a: 136, §170).

In a letter, Hattušili I exhorts his vassal to remain loyal, and not to listen to the hostile words of the ruler of Hahhu. He informs his subject, Tuniya:

> My campaign has begun. So you should be a man with respect to the man of Hahhu. Eat up his grain ration like a dog. The oxen that you take away will be yours. The sheep and goats that you take away will be yours too. Be a man with respect to him. I from this side and you from that side. The iron and the lion that I heard they brought back from the city of Nihriya, send them to me now.[3] And do not listen to the hostile words that he speaks. Keep to the bull's horn(!) and keep to the lion's side and don't take the side of the fox, who always does hostile things. Just as I have treated Zalpa, I will treat him likewise. Don't listen to words from any side (lit. to the right or left). Keep to my words. (Salvini 1994: 61–65; Collins 1998: 16)

The lion and eagle both inspired awe and bespoke power, and thus on the human level were symbols reserved for royalty. Because of their close association with Hittite kingship, they carry the greatest symbolic

[3] This sentence seems to refer to tribute or an exchange of booty. In other words, a live lion is being discussed here and appears to have nothing to do with the lion metaphor that follows.

power in the texts. The Benedictions for Labarna (a title of Hattušili I) relies on them to convey the perfection of the king's image: "His frame is new, his breast is new, his penis is new, his head is of tin, his teeth are those of a lion, his eyes are (those) [of] an eagle, and he sees like an eagle" (Collins 1989: 19).

The wolf was notorious for ravaging the livestock and hence became a symbol of lawlessness. §37 of the Hittite Laws stipulates that in the case of an abduction of a woman that results in the murder of the rescuers, the abductor has "become a wolf."[4] The wolf represents the human who has set himself apart from society. The Palace Chronicle describes how the offender, Huzziya, must undergo a river ordeal to reclaim his humanity: "He was their wolf, and his sons and [his] gran[dsons shunned(?)] him. Huzziya (was) his name, and to him that one ste[pped ...] and he went to the River and he became purified. They gave [...] to that one, and [may] the evil [not return(?)] to him" (*KBo* 8.42 rev. 7–10). In this respect, the wolf is comparable to its domestic counterpart, the dog, an animal that also serves as a metaphor for man. Whereas the dog is the degraded human living on the periphery of civilization (but still within its jurisdiction), the wolf is the outcast human, existing beyond man's sphere or understanding. At the same time, as an animal to be feared, the image of the prowling wolf was used apotropaically in ritual incantations, and the wolf's sociability as a species also served as a model for the members of the Hattušili I's court: "Let [y]our clan, that of my servants, be united like that of the wolf" (*KBo* 3.27 obv. 15'–16').[5]

Some game animals provided useful images, often when denigrating the enemy: "[The gods(?) c]alled the Hurrian troo[ps] (as though they were) foxes that had been chased [into the] bu[shes. When the Hurrian army] came [int]o the Ḫatti [land], [...] the country w[as] overturned [...]" (Collins 1998: 17). The fox as a metaphor for the enemy recalls Hattušili I's letter to his subordinate cited above: "Keep to the lion's side and don't take the side of the fox, who always does hostile things." Similarly in the Zukraši of Aleppo text, also composed during the reign of Hattušili I, symbolic language employing the bear draws on the idea of predator become prey, that is, of raw power overcome: "Go! To the ruler of Ḫaššu say: 'I will go [...] and (you) come against (me)! [If] you

[4] See Weitenberg (1991) for a legal interpretation of this phrase in Hittite.

[5] See Weitenberg (1991: 192–93) for a different interpretation of this passage, which however does not consider the similar passage in Hattušili's Testament involving the *wetna*-animal or the river ordeal in the Palace Chronicle cited above.

do not come I will [hunt(?)] you like a bear, and you will die with a cry of pain'" (Collins 1989: 99–100). The use of animal terms to designate the enemy is known elsewhere (Miller 1970: 177 n. 2).

Other, lesser animals were occasionally called upon in literary compositions to emphasize a point. When presented with his new son, Ullikummi, the Hurrian god Kumarbi professes his hopes for the outcome of the former's mythological future battle with his arch enemy, the Weathergod: "Let him strike Teššub. Let him chop him up fine like chaff. Let him grind him under foot [like] an ant. Let him snap off Tašmišu like a brittle red. Let him scatter all the gods down from the sky like birds. Let him smash them like empty pottery bowls" (Hoffner 1998: 58). Of the Hittite proverbs collected by Beckman (1997b: 215) only one employs an animal: "(When) a bird takes refuge in its nest, the nest preserves its life."

The remainder of the wild animals, including hares, mice, and insects, are virtually devoid of symbolic meaning as far as the texts reveal, with the notable exception of the bee, whose appearance in the literature is partially dependent on its association with the goddess Hannahanna (Collins 2001).

Although domestic animals were used often in symbolic language, they were not as effective as wild animals in suggesting a mode of thought. They did not reflect human social order so much as participate in it. Symbolic language involving domestic animals is not surprisingly most often an outgrowth of their domesticity. For example, we find similes like the following: "You are stubborn like an ass O Queen Ištar!" (*KUB* 24.7 ii 18–19); "for the mighty Hedammu [sweet] sleep seized hi[s] soul, and, just like a sleeping cow or donkey, [...] he distinguishes [not]hing and he eats frogs and salamanders(?)" (Collins 1989: 227–28).

Of the domestic animals, the dog and pig are the most colorfully presented in Hittite sources. The Prescriptions of Queen Ashmunikkal to the Guardians of the Mausoleum employs a proverb for the benefit of those who attempt to collect taxes from the exempted facility: "A dog barks, but when he arrives, he is silent" (*KUB* 13.8 obv. 7). The reference may be to zealous bureaucrats who "bark" for payment of an obligation that they cannot collect from exempted persons, and so fall silent. Another proverb warns that "a pup[py] is unclean, but it will devour a chariot worth one mina" (*KUB* 21.29 iv 6–8). The message: Never underestimate the damage that can be done by an otherwise innocuous creature. But compare the more sympathetic image of the

puppy in the Song of Hedammu: "(Šauška) anointed herself with fine perfumed oil. She adorned herself. And (qualities that arouse) love ran after her like puppies" (Hoffner 1998: 54). A scribe's oath of loyalty to the king describes the latter's patronage: "For the sake of my father and my mother, my Lord took me away (while) very young, and my Lord raised me up like a puppy from its own dung-filled dust" (*KUB* 26.32 i 6–8). The pig in its sty is an unfortunate image for the ill-fated Muršili III (Urhi-Teššub): "Although she (the Sun Goddess) had never before abandoned Urhi-Teššub, she (now) locked him up in Šamuha like a pig in a sty" (*KUB* 1.1 iv 24–26). Finally, a deity is beseeched to ignore the incoherent communications of the dog and pig: "[The do]g barks, the pig squeals, [but] you, [O Deit]y, must not listen to (the sound) of anything!" (*KBo* 12.96 i 12'–13').

The most likely example of humor or irony in Hittite literature is a passage from the Siege of Uršu text, an Old Hittite document that describes events in the reign of Hattušili I. The king exhorts his commanders: "When you go [into] battle, exhibit (your) nobles before [you] form afar! (But) a dog will run before <you>. That dog [will ...]—(but) who will see him?" (Beckman 1995: 25). Beckman suggests a literary play on the Hittite idiom "to run before," which is used of commanders of a military force. "It is a common observation that dogs—considered by the Hittites along with swine as unclean—often accompany the movements of a military force. Thus the burden of the king's comparison seems to be that while his officers might have a high opinion of themselves due to their responsible position within the line of march, this position in itself is an empty form—even a dog may 'run before' an army—in the absence of performance justifying that honor" (Beckman 1995: 31–32).

IDYLLIC SCENES

Natural Order

Whereas domestic animals represent continuity for man, wild animals are a symbol of change and disturbance in the social order. Nevertheless, according to a number of mythological passages, the Hittites attempted to project order onto the natural world around them. Animals offer a metaphor for paradise and order in the face of chaos. Order and continuity are symbolized by animals acting and interacting in their natural habitats in a manner appropriate for them. Iriya's Ritual in-

cants as follows: "'You must help me!' Thus (say) the Springs (var. Waters): 'Do not fear them! We will [help you].' The frog takes (it) with (his) mouth. [... and] gulps it down. The salamander(?) [takes] it with (his) *šappu-* [...]. The frog [will carry] it to the deep. [The salamander(?) will carry it to the waters. The ri]ver will carry it to the sea" (Collins 1989: 228–29). An image of order, of each creature having its place and each contributing to the overall state of order is evoked in this passage.

A handful of incantations within a mythological context describe natural scenes in which prey and predator coexist peacefully in a wild paradise. One of these is recited in honor of the trees that are felled for the construction of a new palace:

> You spread out under the sky. The lion rested beneath y<ou>, the leopard rested beneath you, but the bear climbed up in you. The Storm God, my father, kept evil away from you.
>
> The cattle pastured beneath you, the sheep pastured beneath you, and now I, the King, L[abar]na, have united with you ..." (*KUB* 29.1 i 28–34; Collins 1989: 51)

An incantation designed to nullify the effects of sorcery begins by describing such a scene. The subsequent drying up of the elements are a form of sympathetic magic designed to "dry up" the sorcery along with them: "There stands a spring. Therein stands a tree. Under (it) the newborn lion sleep, the yearling deer sleeps. (But) the spring dried up. § Therein the tree dried up. The newborn lion dried up. The yearling deer dried up. The sorcerous tongue of evil dried up" (*KUB* 12.62 obv. 16'–rev. 2; Beckman 1983: 192–93).

The sacred tree is a common motif in ancient Near Eastern iconography, but literary descriptions of it are much more rare. One Hittite mythological text may be referring to this tree when it describes the arboreal residents: "Above an eagle perched on (its) branches, below a snake coiled about its trunk(?), in (its) midst a bee hove[red]" (*KUB* 43.62 iii 5'–7').[6] The three creatures described here inhabiting the tree are also, perhaps not entirely by chance, the only animals who appear as active participants in the mythology. The bird and snake are found in association with each other and also with the sacred tree in Syro-

[6] For a discussion of the connection between trees, the snake and the Storm God in Anatolia and Syria-Palestine, see Lambert (1985), and for Classical comparanda for the iconographic tradition of tree, snake, bird and ram, see Fauth (1977/78).

Palestinian art (see p. 216); and compare the fable of the eagle and the serpent in the Mesopotamian Story of Etana, wherein the two animals make their homes in the same tree (p. 281).

MYTHS AND TALES OF ANIMALS

Unlike their counterparts in Mesopotamia, animals in Hittite literature, with few exceptions, are not personified. Nor, again with only a few exceptions, are they given names. Not even dogs are portrayed with such familiarity. This is not to suggest that the Hittites did not feel as warmly toward family pets or possess an oral folklore in which animals were endowed with human thoughts and modes of behavior, but the nature of the body of literature was such that these aspects of human-animal interactions were not dwelt upon, or at least were inappropriate to the types of documents being archived.

The eagle and bee are central to the collection of Old Anatolian Missing Deity Myths, the best-known of which is the Myth of Telipinu. Both creatures are sent to find the missing god—the eagle because its keen sight and speed make it particularly suited to searching on a grand scale, and the bee because it is a symbol of abundance, which is precisely what Telipinu's absence has taken from the land:

> The great gods and the lesser gods began [to search for] Telipinu, but [they did] not [find] him.
>
> The Sun God sent the swift eagle: "[Go] search for Telipinu." The eagle went. It searched [the springs(?). It searched] the rivers. But it didn't find him. So it brought back a report to the Sun God: "I didn't find him."
>
> Hannahanna sent a bee: "You go search for [my son] Telipinu. When you find [him], sting his hands and feet and make him stand up. Then take wax and wipe him off. Then purify him and make him holy again. Then conduct him back here to me."
>
> The Storm God said to Hannahanna: "Now the great gods and the lesser gods were searching for him, but didn't find him. So will this bee go find him? Its wings are small. It too is small. And furthermore it is all by itself(?)."
>
> [Hannahanna] said to the Storm God: "Desist. It will go find him." (Hoffner 1998: 18–19)

Another version of the story describes how ultimately the bee is successful in finding Telipinu, but not before running out of the items needed to soothe the angry god, who goes on a rampage as a result:

> ["... You, O bee, should look for Telipinu]. And when you find (him), sting [him on his hands and feet. Make] him stand up. [Take wax] and [wipe off] his eyes and his hands. Purify him and bring him back to me."
>
> The bee searched the high mountains; it searched [the deep valleys; it searched the Blue] Deep. The honey was exhausted in its interior, [the ...] was exhausted [in its ...]. But [it found] him in a meadow in the town of Lihzina, in a forest. It stung [him] on his hands and feet, so that he got up. (Hoffner 1998: 20)

The speed and keen eyesight that made the eagle an excellent source of imagery for the Hittite royal house also made it well-suited to act as a divine messenger, whether to search out aberrant gods, or to convey the king's desires to the heavens, as in this Foundation Ritual:

> When the king comes into the house then the Throne calls the eagle (saying): "Go. I am sending you to the Sea. But when you go, look into the field and forest, who(ever) remains there."
>
> And that one (the eagle) answers, "I have looked into (them) and Išduštaya (and) Papaya, the infernal ancient deities, the in-laws(?), are sitting there, crouched."
>
> He (the Throne) answers: "And what are they doing?" That one (the eagle) answers him: "(One) has a distaff, they have full spindles.
>
> They are spinning the years of the king, and there is no limit to the number of the years (they spin for him)." (*KUB* 29.1 i 50–ii 10; Collins 1989: 115)

The eagle is unique in being the only animal in Hittite texts to be given a "speaking part." There are no examples of dialog between animals in Hittite literature, or indeed between humans and animals. Only the gods address the eagle. Even in the case just cited, it is the divinized Throne, not the king himself, who imparts the command to the eagle. The eagle is also the only animal to which personal names are given.[7] In one of these cases, the divine determinative is included, confirming what we might already have suspected from the mythological narratives—that the eagle held divine status.

The goddess Kamrušepa engages the aid of the bee and other animals in a magico-mythological text relating to the voyage of the human soul:

> If it is in the mountain, let the bee bring it and put it in its place. If, however, it is in the plain, let the bee (again) bring it and put it in its

[7] Both examples occur in the *hišuwaš* festival, and refer to images of eagles of precious metal that are associated with the Temple of the Weathergod of Manuziya (Ešuen in *KUB* 32.128 ii 3 and Eribuški in *KBo* 15.37 i 21).

> place. That which is from the plowed flield, let the bees bring and put it in its place. Let the bees go on a journey of three (or) four days and bring my ... here. If it is in the direction of the sea, let the *lahanza*-duck bring it and put it in its place. If, however, it is in the direction of the river, let the *huwala*-bird bring it and put it in its place.
>
> And what is from the sky, let the eagle ... bring it in its talons. Let the desired thing/one be struck by their talons. Let the goat(?) strike with its hoof(?). Let the sheep strike with its horns. Let the mother sheep strike with its nose(?). (Hoffner 1998: 33–34)

The snake was a mirror of the Hittites' anxiety over the natural processes of growth and decline, manifested in the mythological symbol of chaos, the serpent Illuyanka. Illuyanka is the arch enemy of the Storm God in two Anatolian Myths (Beckman 1982; 1997c: 150–51; Hoffner 1998: 10–14). In both versions, the creature is vanquished through the combined efforts of deities and humans, a victory whose retelling assures that the forces of chaos will perpetually be held at bay.

In the Hurrian-influenced mythological literature of the Empire period, animals do not contribute to the narrative. When they do appear, it is as dumb animals. This does not mean, however, that Hurrian literature failed to take advantage of the literary potential of animals. The Hurro-Hittite bilingual wisdom text recently discovered in Temple 16 in the Upper City at Boghazköy, contains a series of parables designed to instruct on points of morality involving the proper relationship of an individual to his god, his king and his father, respectively. The parables are effective because they employ animals to convey their message.

> A mountain expelled a deer from its expanse, and the deer went to another mountain. He became fat and he sought a confrontation. He began to curse the mountain: "If only fire would burn up the mountain on which I graze! If only the Storm God would smite it (with lightning) and fire burn it up!" When the mountain heard, it became sick at heart, and in response the mountain cursed the deer: "The deer whom I fattened up now curses me in return. Let the hunters bring down the deer! Let the fowlers capture him! Let the hunters take his meat, and the fowlers take his skin!"
>
> It is not a deer, but a human. ... (parable continues)
>
> There is a deer. He grazes the pastures which lie beside the streams. He always casts (his) [eyes] upon the pastures which are on the other side, but he does not reach the pastures of (the other) side. He does not catch sight of them.
>
> It is not a deer, but a human. ... (parable continues)
>
> A dog absconded with a loaf of bread from an oven. He pulled it out of the oven and dipped it in grease. He dipped it in grease, sat

down, and set about eating it.

It is not a dog, but a human. ... (parable continues)

A rodent(?)[8] dragged a loaf of bread from an oven. He pulled it out of the oven and dipped [it] in grease. He dipped it in grease, sat down, and set about eating it.

[It is not] a rodent(?), but a human. ... (parable continues) (Beckman 1997a: 216–17)

The motif of the deity who copulates with a cow and begets a child from the union is attested in Hurrian myth in the philologically problematic story of the Sun God and the Cow (Hoffner 1997c: 155; 1998: 85–87; for other examples see pp. 300, 367). A final Hurrian example is an unusual simile in the Song of Ullikummi that likens the Storm God to a *gagaštiya*-animal, possibly a grasshopper: "Teššub jumped up into the wagon like a *gagaštiya-* and with thunder he arrived down to the sea. Teššub battled the Basalt" (after Hoffner 1998: 65).

FANTASTIC ANIMALS

The natural fauna was supplemented in the Hittite imagination by fantastic animals. Although these are better attested in the art than the literature, there are two creatures apparently drawn from the imagination that figure in the texts, the *damnašara-* and *awiti-*. Figurines of the *awiti-* are listed in cultic inventory texts, particularly in association with Ištar, and this creature has tentatively been identified with the winged feline that appears with the same goddess in the iconography. The *damnašara*-creatures appear in, among other places, the mythological story of Kešši (Hoffner 1998: 87–89). The hero has a series of dreams and in the seventh, he encounters snakes (*elliyanka-*) and *damnašara-* at the gate. The *damnašara-* have been interpreted variously as sphinxes or bovine-headed monsters, in either case probably corresponding to creatures known from the iconography. They appear to be guarantors of oaths and guardians of gateways (Haas 1994: 335–36, 473).

[8] This animal (*giluši*) is not otherwise attested. Context suggests an animal similar in disposition to the dog in the preceeding parable, perhaps a pig, but there is no other evidence to support such a translation.

FINE DINING

References to feasting and dining are frequent, particularly in ritual and festival texts. Here, the repast usually consists of mutton, goat, and less often beef. Although direct evidence is lacking, a close examination of Hittite ritual texts suggests at least a possibility that some animals were consumed exclusively by certain social classes. This would seem to be the case, for example, for the hare and the pig. Pork seems to have been distributed to the poor (Collins 1996), while a handful of texts make reference to hare, for example, as part of a royal feast (KI.LAM). Although generally considered inedible and taboo, dogs are apparently eaten by the *dampupi-* (Collins 1990: 213), who seem to be "untouchables" or otherwise already ritually unclean inidividuals. Venison appears to have been eaten, and perhaps also the meat from other wild ruminants. However, there is no clear evidence for the consumption of other wild species, specifically predators (cf. Ünal 1985: 427–31; von den Driesch and Boessneck 1981: 55–56). Fish and a variety of birds are also listed on the ritual menus. Outside the ritual and mythological texts, detailed descriptions of feasting or dining are lacking.

THE HUNT

By the Late Bronze Age in Anatolia, hunting was no longer a primary means of obtaining food. It had by then become a diversion for the wealthy and was practiced only in self defense by the poor. Hunting expeditions such as that described in the letter of the official, Habiri, to the Hittite king (Hoffner 1997b: 6–7) were undertaken to stock the royal game preserve. Captive wild animals were also used frequently in religious performances. The target of such expeditions were wild mammals and birds. Although fish are attested in the texts, primarily as menu items, the Hittites appear not to have been keen fishermen as fish are always referred to generically, without reference to varieties.

According to the iconography, the tools of the hunter were bow and arrow or spears, and hunting dog. The Hittite version of the Gilgamesh Epic refers to hunting by means of hunting pits and nets. The dog's importance to the hunt was such that Hittite orthography designated hunters by means of the Sumerogram ^{LÚ}UR.GI$_7$, literally "dog-man." Falconry was probably not practiced in the Near East until late in the first millennium B.C. (see Reiter 1988). Relief carvings of the Protective

Deity on whose hand perches a bird of prey while a dead hare hangs from the other, have been interpreted as evidence of falconry in Anatolia, but falcons don't prey on hares, so this iconographic tradition is probably best understood as a symbolic representation of the deity's oversight of wild nature.

The earliest attested Hittite document, the Chronicle attributed to King Anitta, has, as one of its main subjects, a royal hunt. Anitta boasts:

> I made a vow and [I went on] a hun[t]. On the first day I brought to my city Neša two lions, seventy pigs, sixty wild boar, and 120 (other) wild animals, (among them) bears, leopards, lions, deer, gazelle and [wild goats]. (After Collins 1989: 99; cf. Hoffner 1997c: 184)

The prestige of the hunt served as propaganda to sustain Anitta's claim to rule. The list of big game animals found in the Anitta Chronicle became a stock formula in Hittite texts. These animals—leopard, lion, boar, bear, wolf, deer, gazelle and wild goat—were the consummate prey for hunters. They appear in procession in the important KI.LAM Festival, where they are labeled "animals of the gods."

Although no longer a necessity for survival, hunting maintained its sacred nature through ritualized celebrations and enactments. The prevalence of ritual officiants bearing titles like "bear-man," "lion-man," "wolf-man," "leopard-man," and "dog-man," further testify to the importance of hunting in the ritual life of the Hittites. The connection between hunting and religion in Anatolia is explored further in chapter 11.

CONCLUSION

Animal imagery as it is used in the Hittite texts reflects the economy and environment of Anatolia in the Late Bronze Age. A pastoral-agricultural people could relate to pastoral images and to the stock of symbols revealed in the sources. Many of these symbols and images are traditional, that is, they belong to "the mythology of everyone." Some, however, "are strictly contemporary and some are esoteric, relying on a private code which only the initiate can interpret" (Rowland 1973: xvii). Because of this, the texts can offer only a glimpse into the symbolic world of the Hittites. Still, the importance of animals, both wild and domestic, to the stock of symbols revealed in the written sources provides solid testimony for their central role in all aspects of Anatolian society in the Late Bronze Age.

CHAPTER EIGHT

ANIMALS IN EGYPTIAN LITERATURE

EMILY TEETER

The prominence of animals in ancient Egyptian texts[1] is immediately evident, for of the roughly 800 commonly employed hieroglyphic signs used to write ten Egyptain language (Gardiner 1957: 544–48), 176 represent animals or parts of animals. The use of animal imagery in writing and literature (as well as religion), is due to the Egyptian's sense of harmony with the natural world as opposed to an outright sense of domination over nature. Many texts indicate the parity of all life forms, whether human or animal.[2] As Hornung has succinctly stated, "man was not accounted lord of the animals, but partner of the animals" (Hornung in te Velde 1980: 77), a concept that was further developed in Late period texts that recount that animals were created by Khnum, the same god who created mankind (te Velde 1980: 77).

The Egyptians could not conceive of life (and the afterlife) without animals. A description of the capital of the Ramesside kings at Pi-Ramesses includes references to them: "It was [the god] Re who founded it [the town] himself. A town pleasant to live in; its countryside is full of

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Note on abbreviations: The standard English-language editions of Egyptian literary texts, M. Lichtheim, *Ancient Egyptian Literature* (3 vols.; 1973; 1976; 1980) are hereafter abbreviated as AEL I, AEL II, and AEL III, respectively.

[1] This discussion is based upon evidence primarily from literary texts (fables, tales, wisdom literature and instructions) from the earliest times into the Roman period, although non-literary texts (letters, historical, "miscellanies," autobiographical and religious texts) are also cited. See Loprieno (1996: 220–21) for a discussion of the difficulty in classifying autobiographic texts as literary and pp. 216–17 for the general conclusion that "the border between theology and literature remained fluid throughout pharaonic history."

[2] In the text on the Shabaka Stone: The forces of the creator god (Ptah) are active in "all the gods, all people, all cattle, all crawling creatures," from te Velde (1980: 77). See also Brunner (1977) for texts that call upon people of the earth, "the fish in the flood and the birds and the heaven" to acclaim the power of the god. The texts indicate that the animals, like people, had the ability to praise the deity. See also hymns to the creator god (te Velde 1980: 78; Brunner 1977) that relate, "Tell it [the greatness of god] to son and daughter, to great and small. Tell it from generation to generation not yet born. Tell it to the fish in the river and the birds in the sky"—which also suggest that man and beasts had the same ability to hear and comprehend.

all manner of seed, and it has food and victuals every day. Its ponds have fishes, its pools have birds ... red *wḏ*-fish of the lake of the Residence that live on lotus flowers; fine *dbin*-fish of the waters, *br*-fish together with ... (Caminos 1954: 505)

The constant presence of animals in the Egyptian psyche is further indicated by a text from the Late New Kingdom (ca. 1000 B.C.) that describes the ideal residence:

> A fowl yard and an aviary with *r*-geese; byres packed with oxen; a breeding bird pool with geese; horses in the stable .... Your sustenance is established and a flood bearing fowl is for whomsoever has come to you. ... The west is a pond for snaring *r*-geese of all sorts, a resort of hunters from the very beginning. One of its ponds abounds in fish (more than a) lake; its *ʿh*-bird is like a bird of the marshes. ... Many stalls are in its neighborhood, a grazing field for the oxen, many goats, capering kids, and many lowing cattle. There are cool places abounding in green grass in summer and winter along with many *wḏ*-fish in their irrigation basins, with bulti fish, *šnʿ*-fish and *ḏss*-fish. Fishes are more plentiful than the sand of the riverbanks; one cannot reach the end of the them. (P. Lansing in Caminos 1954: 412–13, similar allusion pp. 410–11).

The awareness that gods were ever-present and that they were incarnate in animal forms, joined with the factor that the boundary between the religious texts and literary texts was always flexible (Loprieno 1996: 216–17) may also explain the strong presence of animals in all types of texts. This association of animals with gods, and the perceived purity of the natural state of animals added to their role in moralistic tales (Posener 1971: 249). These tales often take place in imaginary places or legendary times that bridge the time-space constraints of the reality of daily life (Hollis 1990: 164; Hollis 1995: 2257), thereby creating additional means of interaction between humans and animals.

Animals are rarely villains in Egyptian literature, but when evil, their actions are part of their characteristic behavior or a reasonable response to threat. They may however be portrayed with ambivalent natures seen in other aspects of Egyptian culture (see chapter 12). The approach of the snake in the Shipwrecked Sailor is described in frightening and threatening terms: "Then I heard a thundering noise and thought, 'It is a wave of the sea.' Trees splintered, the ground trembled. Uncovering my face, I found it was a snake that was coming." Yet, the enormous snake is one of the most sympathetic characters in all Egyptian literature, as recounted by the sailor; "He took me in his mouth, carried me to the place where he lived, and set me down unhurt, I being whole with nothing being taken from me." The snake reassured

the frightened man saying "Don't be afraid, don't be afraid," and proceeded to tell him the touching story of how the seventy-five members of his family, even "the little daughter who I had obtained through prayer,"[3] had been killed by a falling star. A manifestation of his humanity is his sad statement; "I could have died for their sake when I found them as one heap of corpses" (AEL II: 212–13). There is no autobiographic or royal inscription that is so self revelatory and touching.

In contrast, the snake was often evil. In the Tale of Setne I, the box that contains the magical book that Setne seeks is protected by "six miles of serpents, as well as scorpions and reptiles, as well as an "eternal serpent," which, in spite of its evil nature, is called the servant of the god Thoth (AEL III:131). Setne battled the eternal serpent, cutting it in half. Yet after being killed twice, the snake regenerated. Finally, Setne killed the snake a third time and prevented it from coming back to life by placing sand between the pieces.[4]

In contrast to the pictorial information that relied heavily upon hybrid and mixed forms (half human/half animal), with rare exceptions, the animals in literary texts are described as being of normal appearance. These exceptions include the griffin in *Mythus* who is described as having the head of a falcon, the eyes of a man, the body of a lion, ears in the form of fish's fins, and a serpent's tail (de Cenival 1988: 43).[5] The great snake in the Shipwrecked Sailor was "of thirty cubits[6]; his beard was over two cubits long. His body was overlaid with gold; his eyebrows were of real lapis lazuli."[7]

A distinguishing feature of animals in Egyptian literature (especially the fables) is their ability to speak, hear, and comprehend human (and

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[3] Compare this to autobiographical texts such as Taiemhotep (AEL III: 62), which also contains a reference to praying for children.

[4] Sand was ascribed specific magical powers. In Setne I (AEL III: 129–30), Naneferkaptah filled his ship with sand that he used to bridge the watery gap that separated him from the magic book he sought. Sand was sprinkled on the floor of temple sanctuaries during the daily offering ritual as a symbol of the primeval mound, and sand was poured into foundation trenches as a form of purification. See references in Ritner (1993: 155–57). The theme of the power of animals to regenerate is also encountered in the story of the magician in P. Westcar (AEL I: 219). There, a goose's neck is severed, but upon command, the body and the head rejoin.

[5] See M. J. Smith (1984: col. 1086, n. 39) for the comment that this description can be interpreted as a "rudimentary system of zoological classification, according to which all creatures on earth are divided into five distinct groups."

[6] The Egyptian cubit was 20.5 inches, hence the snake was over fifty feet in length.

[7] See Fischer (1977: 155–58) for the form of the snake and especially p. 155 n. 1 for comments about the specific anatomical terms employed.

divine) instruction,[8] and to display intuition about human behavior.[9] In literature, animals converse easily with each other, the differences in species not creating any obstacle to communication. This is perhaps a reflection of the Egyptian world view. The population of Egypt was, as indicated by texts and representations, made up of people of "Egyptian," Libyan, and Nubian extraction, yet all conversed in the *lingua franca* of Egypt—the Egyptian language. See for example the reference in a text about an unteachable pupil that states that [even] "an ape understands words, and it is brought from Kush" (Caminos 1954: 13), which, while certainly unflattering to Egypt's southern neighbors, may also be a comment about the different tongue spoken by the Nubians. Another foreign animal, the great snake in the Shipwrecked Sailor, had no difficulty conversing with the Egyptian sailor. In contrast is the secret language (*mdw pꜣ šꜣ*) of the baboons, which gave "access to the religious knowledge, that was hidden from common beings" (te Velde 1988: esp. 131–34). Unlike the language that was shared by animals and humans, only the king and certain beings "with a mythical reputation" (the *hmhmt* and *rḫyt*) could understand the speech of the baboons. Baboons could however also converse in the normal speech shared by other animals. See for example *Mythus* where Thoth in the form of a baboon relates stories to the daughter of Re in the form of a cat or a lioness (de Cenival 1988).

The tradition of speaking animals may first be attested in Pyramid Text 386a that relates, "there is no goose that lays an accusation against the king; there is no ox that lays an accusation against the king."[10] Even more explicit is the slightly later text: "Oh lion, I [personal name] am a

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[8] See Setne I (AEL III: 130) where "six miles of serpents, scorpions and all kinds of reptiles" were prevented from attacking him after he recited an incantation, therefore one can assume that they understood the spell. For other comments about animals speaking, see Griffiths (1991b: 32–34). According to Hollis (1995: 2257), animals who speak are characteristic of Egyptian fables. The idea of animals speaking to humans is not dissimilar from the tradition of humans speaking to the Egyptian divinities. A common epistolary formula is "every day, I tell Amun Re, and every god and goddess by whom I pass to give you life, prosperity and health" (examples in Wente 1967: 51, 55). Many Theban temples have chapels called "the place of hearing petitions" (*st sḏm spꜣw*) where the local inhabitants could speak with the god (Teeter 1997: 4–5).

[9] The Late Egyptian Miscellanies (ca. 1000 B.C.) contain many references to how animals are easily trained to follow human behavior to the degree that the cow "begins to hearken to the herdsman; it can all but speak" (Caminos 1954: 377). See also Caminos (1954: 13, 83, 232), for references to being able to train animals to sing or dance or otherwise assume human behaviors.

[10] See Griffiths (1991a) for the theme of "accusing" animals.

hare" (Coffin Text Spell 388, de Buck 1954: 57; Brunner-Traut 1968: 85). Although the majority of texts indicate that humans conversed naturally with animals (AEL II: 202; AEL II: 205), the story of Setne I relates that Setne "discovered what all the birds of the sky and the fish of the deep and the beasts of the desert were saying" (AEL III: 130) only after he recited a spell from a magic book. In Setne II, one sorcerer castigates the other with the remark, "is it he whom I taught the language of wolves[11] who does sorcery against me?" (AEL III: 149), suggesting that that "dialect" was not normally understood by humans.

Yet other than the insight gained by speech and comprehension, animals usually exhibit behavior characteristic of their species such as the speaking cow in the Tale of Two Brothers who docilely leads the herd (AEL II: 205). So too, the relationship between man and animal is usually based upon natural and customary forms, as in the Tale of the Doomed Prince where the characteristic affection between man and dog is expressed ("bring him a puppy [so that] his heart [will not] grieve" [AEL II: 200]), although the prince was fated to die by a dog. Here, the natural attraction between man and hound takes precedent over the prince's projected fate.

FABLES AND TALES

The genre of Egyptian fables and tales dating from the Middle Kingdom (ca. 2000 B.C.) into the early Roman era, like their western counterparts, are richly populated with animals and images of animals. It has been suggested that animals were employed in the fables to make the demonstrated "human weaknesses" more palatable (Hartman 1971: 85). It is in this form of literature, especially those tales written in Demotic (Lichtheim 1980: 8, 157) that the speaking and comprehending animals are best represented. These tales tend to be strongly moralistic yet not overly pious. The frequency of animal images in the Demotic wisdom texts is an indication that, as stated by Posener (1971: 249) "the lives of animals and their habits had long served as an allegory from which a moral was drawn."[12] Although the fables are af-

[11] The word employed is *wnšt* which is conventionally translated as "wolf" (Erichsen 1954: 92) although wolves did not exist in Egypt, hence the animal may be a feral domestic dog (see chapter 5). See also Griffith (1900b: 197) for the translation as "jackal language(?)."

[12] For additional discussion of animals in Egyptian allegories, see Griffiths (1991b: 308–11; "Allegory in Greece and Egypt").

fected by the general atmosphere of religion that permeated every facet of Egyptian society, the tales are softly moralizing rather than strongly didactic in tone. The themes of the fables repeat virtues known from autobiographical and instructional texts.

It is very probable that we have only a small fraction of the narrative stories that incorporate animals. This is suggested by figured ostraca and "satiric" papyri that show animals interacting in complex ways that are suggestive of narratives not yet recovered (Brunner-Traut 1979; 1988; Spiegelberg 1917: 6–8).

The relationship between man and animal in fables is portrayed with considerable variation. In the Tale of Truth and Falsehood, Truth was thrown to the lions, yet they refuse to eat him, overcoming their instinctual behavior (AEL II: 211–12). In contrast, the idea of man being evil and the enemy of animals is the theme of the Demotic tale of the lion and mouse in the cycle of *Mythus* (AEL III: 156–59). In that story the lion encounters a panther "whose fur was stripped, whose skin was torn, who was half dead and half alive because of his wounds," a yoked horse and donkey, an ox and cow "whose horns were clipped and whose noses were pierced and whose heads were roped," a bear whose fangs and claws had been cruelly removed, and a lion whose paws were manacled by a knot in a tree. Each animal cautioned the lion, "there is no one more cunning than man! May you not fall into the hand of man!" This story is unusual in its uniformly negative view of man, a deserved reputation for he tricked and lied to the animals in his efforts to subjugate them.

The theme of the weak being equal to the strong before god is illustrated by the tale of the jackal and lion in *Mythus*. This is among the most common morals expressed in the fables and it is ubiquitous in Egyptian literary and non-literary texts alike.[13] This theme encompasses the value of humility that dictated that even a wealthy individual should decline to boast about his wisdom, fortune or personal belongings, and above all he would "give bread to the hungry, beer to the thirsty"[14] and

[13] See also Brunner-Traut (1977: 71). The Eloquent Peasant (AEL I: 169–84) praises the simple man who advances through his eloquence and persistence and remains on the right side of law rather than attaining his influence through wealth, birth and good political connections.

[14] This is among the most common phrases in autobiographical inscriptions. See Janssen (1946: 77–80). See also the Instructions of Ani: "Do not eat bread while another stands by without extending your hand to him. As for food, it is always here, it is man that does not last; One man is rich, another is poor, but food remains for him [who shares it.]" (AEL II: 141–42).

help those less fortunate than himself. The idea of the weak saving the more powerful is clearly drawn in the Tale of Two Brothers where the docile cow warns Bata of the danger lurking behind the door (AEL II: 205) and in *Mythus* where the mouse frees the lion from his fetters (AEL III: 159), a tale that was later echoed in Aesop (Brunner-Traut 1963: 282).[15] In the conclusion of the Egyptian version, the tiny mouse rides away into the mountains perched in the mane of the mighty lion (AEL III: 159)—a perfect illustration of symbiotic existence of the weak and the powerful.

Animal metaphors and similes were used to convey the essential elements of Egyptian honor—the glory of the quiet and thoughtful man who shows self control.[16] The snake in the shipwrecked sailor advises the sailor "if you are brave and control your heart, you shall embrace your children, you shall kiss your wife, you shall see your home" (AEL I: 213). When offered costly gifts in exchange for his help, the snake politely refused countering; "Make me a good name in your town; that is what I ask of you," which reflects the traditional value of personal honor over worldly goods (AEL I: 214).

The theme of one's encounter with fate is also illustrated by the animal fables. In the story of the mouse and lion in *Mythus,* the tiny mouse saved the lion from his fetters because "as he [the lion] lay suffering on the mountain, in the seventh hour of the night, Fate wished to make his joke come true, because of the boastful words that the lion had spoken, and made the little mouse stand before the lion. He said to him, 'Do you recognize me? I am the little mouse whom you gave his breath [of life] as a gift'..." (AEL III: 159).

The tale of the two jackals and the lion in *Mythus* (de Cenival 1988: 49–51) deals with the power of the weak before the powerful, the victory of reason over might and the theme that foolish and dangerous natural behavior may be overcome by breeding and manners.[17] In the

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[15] See also Bianchi (1988: 248–89) for additional references for Aesop's borrowings from Egyptian literature.

[16] See also the instructions of Ani: "Do not talk back to an angry superior, Let him have his way; Speak sweetly when he speaks sourly, It is the remedy that calms the heart" (AEL II: 143).

[17] This theme of overcoming nature is addressed in the Instructions of Ani: "The fighting bull who kills in the stable, He forgets and abandons the arena; He conquers his nature, Remembers what he's learned, And becomes like a fattened ox" (AEL II: 144). This is followed by references to a savage lion, a horse, a dog, a monkey and a goose each of whom is trained to overcome their nature, and by a reference to a Nubian and to a Syrian who are taught to speak Egyptian, apparently, overcoming their own savage natures!

course of the story, two jackals are approached by a lion. Rather than instinctively running, they stand their ground. When the puzzled lion asks for a reason for their strange behavior, the jackals pragmatically explain: "You would have overtaken us anyway and why should we tire ourselves before we are eaten?" Since the lion, the representation of power in the story "was not disgusted with truth" (de Cenival 1988: 51), he let them go. This sentiment is first fully articulated in the Maxims of Ptahhotep composed in the Old Kingdom:

> If you meet a disputant in action,
> a powerful man superior to you,
> Fold your arms, bend your back,
> To flout him will not make him agree with you.
> Make little of the evil speech
> By not opposing him while he is in action;
> He will be called an ignoramus,
> Your self-control will match his pile of words. (AEL I: 63–64)

The theme of good action being repaid with good is reflected in the mouse and lion cycle of *Mythus* when the mouse proclaims that he will save the lion because "it is beautiful to do good to him who does it in turn" (AEL III: 159).

The fruitlessness of revenge[18] and of the duty to honor oaths are the themes of the story of the cat and the vulture in *Mythus* (de Cenival 1988: 3–5). In that story, two natural enemies, a cat and vulture, agree to protect their young offspring by swearing a non-aggression pact in the name of the god Pre. Afterward, a fledgling leaves the nest and is wounded while stealing food from the kittens. The mother vulture, not acknowledging that the kitten's natural behavior could not overcome an oath, (an oath incidentally not sworn to by the kittens) takes her revenge, killing all the kittens and feeding them to her fledglings. In recompense for the vulture knowingly breaking her oath, the god allowed a spark from a bit of roasting meat that the mother brought to the nest to burn it along with her offspring. Another theme of the story, certainly not limited to Egyptian texts, is that parents, as hard as they may try to raise their young well, cannot be entirely accountable for the actions of their offspring.[19]

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[18] This is echoed in actual Egyptian law which is known from a few law codes and numerous decrees (see summary in Allam 1984; Lorton 1995). Recompense was generally in the form of fines (paid in kind) or beatings, or a combination of the two, rather than revenge.

[19] See for example in the Instructions of Ani: "A boy does not follow the moral instructions, Though the words are on his tongue" (AEL II: 144).

The teaching that "crime does not pay," that violence begets violence, and that all is in the hand of the god as related in the previous story is expanded upon the story of the two vultures in *Mythus* (de Cenival 1988: 41–47). In that story, one vulture claims to be able to see any event in the world, the other to be able to hear any sound, "even a decree of [the god] Pre." They witness a harrowing example of the small being consumed by the large as a fly is eaten by a lizard, the larger animal in turn consumed by a snake, a falcon, a fish, a larger fish and a lion. The lion is carried off by a griffin—the fantastic animal being employed as the grand finale, for no Egyptian animal was superior to a lion.[20] In the closing lines, the griffin is identified as the messenger of Re, and the moral being that those who kill will be killed, for even the death of a fly is noticed by Re (de Cenival 1988: 45).

The ability of one animal to transform or metamorphose into another is a feature that is encountered in the fables. In Egyptian literature, transformations are well-attested in non-literary funerary literature such as the Pyramid Texts (Old Kingdom, ca. 2400 B.C.) and the Book of the Dead (New Kingdom, ca. 1500 B.C.). Pyramid Text Utterance 315 recounts "[king] Unis is an *Ian*-baboon, a *Hetet* baboon, a *Patet* baboon; Utterance 317; "Unis is Sobek (the crocodile-form god)." Such transformations are more pronounced in the Book of the Dead including Spell 77 for being transformed into a falcon of gold; Spell 78 for being transformed into a divine falcon; Spell 83 for being transformed into a *benu* bird; Spell 84 for being transformed into a heron; Spell 86 for being transformed into a swallow; Spell 87 for being transformed into a snake; Spell 88 for being transformed into a crocodile. The ability of a person to transform himself was fundamental to rebirth after death and becoming a transfigured spirit (*ꜣḫ*), which was most commonly represented in the form of a phoenix.[21] Transformations of this type are a feature of the gods in *Mythus*, in particular the daughter of Re (Hathor-Tefnut) whose form alters from a cat to a raging lioness, depending upon her mood (de Cenival 1988). In a similar fashion, in the Story of Horus and Seth the two brothers assume the form of hippos (AEL II: 218, 221).

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[20] See p. 267 for the lionine epithets of the Egyptian king. For the superiority of the griffin, see *Mythus* (de Cenival, 1988: 45): "there is nothing greater [on earth] than a griffin."

[21] Prayer of Paheri (J. Foster 1995: 127): "Become transformed into a living spirit—powerful over bread, and water, and air—which may take shape as a phoenix or swallow, as falcon or heron, just as you wish." See also Quirke (1992: 141–71); Forman and Quirke (1996: 7, 23).

Some of these extraordinary transformations served as a clue to the sacred nature of the new manifestation. In the Tale of Two Brothers, Bata transformed himself "into a great bull of beautiful color" of a "kind unknown to man" (AEL II: 209), hence its special (but unspecified) nature. Other transformations are only metaphors such as in the Tale of Two Brothers, when the brothers became "like a leopard" when they were angry (AEL II: 205), and Horus, in the Battle of Horus and Seth, who was fierce like a leopard (AEL II: 219). In Setne II (AEL III: 149–50), the punning that was so beloved to the Egyptians is brought into play when the Nubian magician and his mother transformed themselves into ganders (*ỉmn*) to become invisible (*ỉmn*) and thereby escape the Egyptian magician.

WISDOM TEXTS, DIDACTIC LITERATURE AND LETTERS

As indicated by Posener (1971: 253), "one wonders whether there is any other people which has produced so many wisdom texts."[22] These texts, which take the form of brief aphorisms, rely heavily upon animal imagery, no doubt because of the perceived intrinsic goodness of animals, and the color and texture that similes added to the texts.

Instructions of the Late period (P. Insinger, Ankhsheshonqy) make far greater use of animal imagery than the earlier didactic texts such as Ptahhotep. These later texts often take the form of proverbs such as "he [the farmer] will extend his hand like a lion" (Jasnow 1992: 114), perhaps a reference to the poor man turning to theft in troubled times. Many of these aphorisms are very oblique, indeed so much so that some are incomprehensible.[23] Problems in interpretation are compounded by the fact that most Late period wisdom texts are made up of seemingly randomly arranged phrases that have no relationship to each other[24] and hence give no hints as to their interpretation, or why a specific animal was employed.

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[22] The fame of the ancient Egyptian wisdom texts is evoked in the story of Wenamun in which the prince of Byblos exclaimed: "It is from her [Egypt] that wisdom came forth to reach the land where I dwell." This of course is not an impartial judgment, for the text is an Egyptian composition for Egyptian audiences. Perhaps a more partial judgment is in the Bible 1 Kgs 4:30–5:10, which refers to "all the wisdom of the Egyptians." (Both references from Posener 1971: 253). See Loprieno (1996: 216–17) for the argument that the wisdom (Instructions) are to be classified as literary texts.

[23] For example, "belly of woman, head of horse" (AEL III: 177).

[24] An exception is P. Insinger, which is grouped by headings (noted by Lichtheim in

A variety of animals were used in reference to man, perhaps an acknowledgment of man's multi-faceted character and humor. For example, the proverb, "a brave man is a hound," (Jasnow 1992: 47) no doubt alludes to the bravery and persistence of a hunting dog while the already quoted "he [the farmer] will extend his hand like a lion" (Jasnow 1992: 114) is a reference to the poor turning to theft in troubled times. The modern expression "dumb as an ox" is echoed in a letter of supplication to a god: "I am a senseless man and spend the whole time following after my (own) dictate like an ox after grass" (Caminos 1954: 60). A wise person was likened to an ibis (Caminos 1954: 420) in reference to the divine judge Thoth who was represented in the form of that bird. "The poison of a breathing snake is (in) its mouth; the poison of an inferior man is (in) his heart" (AEL III: 208) perhaps means that an animal acts evilly from its nature, while man acts from his senses. "One cannot remove the poison of the crocodile, the snake or the evil man" (AEL III: 208), apparently indicates that a man's character cannot be changed. "The one among the cattle that is the first to be sated is the one that is suitable for slaughter" (AEL III: 190) may echo the familiar haste makes waste. "[One catches] the bird that flies onto the fish in order the fill his belly" (AEL III: 190) perhaps suggests that a greedy man is vulnerable. "The fool who looks at a woman is like a fly on blood" (AEL III: 191) may be a reference to the inescapable attraction that women hold. "Do not laugh at a cat" (AEL III: 172) may suggest that one should not act imprudently, for the listener may not register any objection, yet later react. The meaning of "better is a serpent in the house than a fool who frequents it" (AEL III: 195) is obscure, perhaps a reference to a known evil being preferable to an unknown evil. "He saves the ox after whose branding is the slaughter block" (AEL III: 201) may refer to wasting effort trying to evade fate. "It is not of a bull that a bull is born" (AEL III: 168) is perhaps a sad comment that a parent cannot always predict the behavior and outcome of his offspring. "One does not praise a donkey carrying a heavy load" (AEL III: 203) suggests that certain tasks are expected in society and that those tasks should be undertaken without expectation of praise.

A favorite theme of the Miscellanies (ca. 1000 B.C.) was the castigation of the idle scribe or the poor student, both of whom were compared to stubborn animals who refused to be trained: "One spends the whole night ... instructing you, without your listening to any instruc-

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AEL III: 9). Also some Maxims of Ankhsheshonqy are grouped into similar themes.

tion, but you act after your own fashion. The ape understands words, and it is brought from Kush. Lions are trained and horses are tamed; but as for you, one does not discern the like of you within all mankind" (Caminos 1954: 13, similar pp. 83, 232). The idle student was also compared to the stubborn ass: "Are you an ass? One will master him!" (Caminos 1954: 304, similar pp. 131, 437), or "I shall give you 100 blows, and you will disregard them all. You are with me as a beaten ass that recovers in a day" (Caminos 1954: 320). Other texts further compare the idle student to animals that flee (from responsibility) such as a " hartebeest in fleeing" (Caminos 1954: 131, 437). One letter elaborates upon this comparison; "Your heart is perturbed and your will has fled. Your face is like a hartebeest; you are prepared and ready to leap away, you are ready to escape" (Caminos 1954: 450). Apparently the modern expression "silly as a goose" was also held true by the Egyptians: "You are worse than the Nile goose of the riverbank, that abounds in mischief. It spends the summer in destroying the dates... It spends its free time of the year pursuing the cultivators and allows not the seed to be thrown on the ground before it has got wind of it. It cannot be caught by snaring, nor is it offered up at the temple—that evil bird of piercing sight that does no work" (Caminos 1954: 381–82). Animal imagery in relation to students was not entirely negative. In Papyrus Lansing, a diligent student compares himself to "a pawing horse-team; sleep did not come to me into my heart by day, nor was it upon me by night" (Caminos 1954: 410).

The plight of the soldier was evoked through images of stubborn and unfortunate asses: "Come [let me describe his plight]. His bread and his water are upon his shoulder like the load of an ass, his neck having formed a ridge like that of an ass" (Caminos 1954: 92, 169) and "one is after him like a donkey, and he works until sun sets under its darkness of night" (Caminos 1954: 401). Other animal images were also employed to contrast the easy occupation of the scribe with that of the soldier: "He [the soldier] is like a plucked bird" (Caminos 1954: 92, 169), or "he is like a mouse of the high inundation that finds no place of refuge. He is like a bird caught by the wing in a man's hand and cannot fly" (Caminos 1954: 230).

The theme of the power of meekness, which was illustrated in the fables, is also present in P. Insinger: "The small scarab (is great) through its secret image; The small snake has poison" (AEL III: 204).

A good servant, with his ability to undertake any role, was compared to a variety of animals: "Sia, a perfect wise man, a crocodile to the

thief, a fate to an evil one, a guardian poisonous snake in the house of our lord" (Jasnow 1992: 23).

Similes about women also employ various animals. "His wife is like a cat before him" (AEL III: 171), is unclear, perhaps meaning that a woman may be cloying yet indifferent(?), while "if a woman loves a crocodile, she takes on its character" (AEL III: 176) suggests that a woman takes her character from her husband or companions no matter how unsuitable. This same idea of imitative behavior is illustrated in two successive maxims of Anchsheshonqy: "If a donkey goes with a horse, it adopts its pace; If a crocodile loves a donkey, it puts on a wig" (AEL III: 177) although the implications of the latter part of the text are unclear.

The population of Egypt was, in literary and non-literary texts, often likened to a herd of cattle under the control of the king: "Hand over to him [the king] your calf so that he may feed your many calves," (Jasnow 1992: 75), apparently suggests that trust in the king and political obedience is expedient. "You dairy cows here, you nursing cows here" (Pyramid Text Spell 337) is a reference to people being the herd of the god Osiris. A reference to cattle in a Ramesside letter is less clear: "The house of my lord is well, his cattle which are [in] the estate of my lord are well, his servants are well, and his cattle which are in the field are well" (Caminos 1954: 491). Here the cattle on the estate, as opposed to in the field, may refer to the people of the household. Subdued foreigners were also compared to docile herds of cattle (Caminos 1954: 40). In the battle reliefs of Ramesses III (ca. 1176 B.C.), enemies compare themselves to wild cattle: "Behold, it goes ill with [us] to the height of heaven, like wild cattle who [pass] the door of the lion, he [the king] regards the hundreds of thousands as (mere) locusts," (Edgerton and Wilson 1936: 82). In the Admonitions of Ipuwer (ca. 1750 B.C.), the condition of the distressed population was described as follows: "People are like ibises ... people flap like fish" (AEL I: 151).[25]

Many proverbs employ snakes. "Death comes to the snake because of its love of biting," (AEL III: 190) may be a reference to instinctual behavior and how it is difficult to overcome nature. "Do not kill a snake and then leave its tail" (AEL III: 168) is related to the stories in Setne I

[25] This contrast of aquatic and aerial images evokes the totality of the universe. It is echoed in the hymns of supplication of the Ramesside period (see Brunner 1977). See also the image of the people as birds and fish in the Hymn to the Nile and the personification of which is evoked as "Lord of the fish, who makes waterfowl fly south" (J. Foster 1995: 114).

and P. Westcar, which refer to the ability of animals to regenerate, and therefore not to leave a job half finished.

The meaning of some other animal allusions are, to this author, entirely unclear, such as "the pigeon brings harm on its young because of its belly" (AEL III: 190), and "the swallow comes to grief for its little food"[26] (AEL III: 190; both from P. Insinger) and "one uses a horse to go after a ... one does not take a donkey to attain it (AEL III: 177), from Anchshoshenky.

HYMNS AND PRAYERS[27]

Hymns and prayers to deities have many examples of animal imagery. In this context, animals are most commonly symbols of harmony, goodness and purity. The Hymn to the Aton (ca. 1350 B.C.) depicts the peaceful state of the world under the rule of Akhenaten and the Aton in terms of animal behavior: "Birds fly from their nests, their wings spread wide in praise of your person; All the small beasts leap about on their feet, and all who fly up or settle to rest live because you have shone upon them" (J. Foster 1995: 104). A hymn to Hapi, the personification of the Nile, also employs images of animals: "Insects call upon Hapi while they dance in air or buzz along the banks—They announce the birth of children, and the frog booms for happiness," (J. Foster 1995: 119). The power of god was demonstrated by animal images as in a hymn to Amun Re where death is referred to as a crocodile that "is powerless when God's name is spoken" (J. Foster 1995: 74), hence that god can conquer even death. The incarnation of the sun god Re as a cat, or the cat as the protector of Re[28] is the foundation of hymns with phraseology such as "giving praise to the great cat" (Malek 1993: 89).

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[26] This aphorism may be an allusion to the story in *Mythus* of the vulture and cat.

[27] The words "hymn" and "prayer" are conventionally used in Egyptology with little differentiation. See most recently J. Foster (1995: 10), where "hymn" is used to refer to "poems [which] venerated the nature, works and actions of the deity," while prayers "sought help from the deity ... or simply sang the deity's praises."

[28] As in Book of the Dead Spell 17, and Coffin Text Spell 335 "Who is this great tomcat? He is Re himself." See also Malek (1993: 79).

NAMES AND EPITHETS INCORPORATING ANIMALS

Most Egyptian personal names or nicknames were theophoric or they were composed of epithets,[29] yet others are simply the name of an animal such as Ser (The Ram), or of more complex epithets that incorporate the name of an animal, such as Maiemwaset (The Lion is in Thebes).[30] The choice of animal was not restricted to those that we might today associate with grandeur, such as Lion (Pamai) or Bull (Kaemwaset—the Bull is in Thebes), but also of lesser animals: The Hound (Paiwiwi); The Cat (Tamiw/Pamiw); The wild dog (Ib or Paib); also birds: Besbes (the goose); Menet (the little swallow); and reptiles: The Crocodile (Meseh), The Frog (Takerer) and Scorpion (Djaret).[31] Animal names were also used as personal names of the king. From the First Dynasty come the names "Scorpion" and "Catfish," while a Dynasty 22 king was named Pamiu "The Cat."

Animal metaphors and similes were often employed to refer to the king, most commonly as a falcon, a lion or a bull, animals that were also reflected in the titulary and its component epithets. The living king in his association with the falcon god Horus was called the "living Horus on earth." From the end of the Predynastic period (Spencer 1993: 61–62), the name of the king is written within a *serekh*, a representation of the palace upon which the falcon incarnation of the living Horus stands. The titulary of Tuthmosis III, as given in the inscriptions commemorating the Battle of Megiddo, includes the phrases "Strong Bull Arising in Thebes," "Two Ladies" [in reference to the cobra and vulture deities of Lower and Upper Egypt], "Golden Horus." Other kings included epithets such as "Bull of Ptah"[32] (Merneptah), "Bull in Thebes,"[33] (Kaemwaset: Ahmose), "Bull who subdues the Two Lands" (Amunhotep I), and "Bull who loves valor" (Caminos 1954: 38).

Early articulation of the king's associations with animals are expressed in the Pyramid Texts (ca. 2500 B.C.), such as Utterance 273: "This is Unis the king as a falcon, fiercest of forms of the Great Hawk" (J. Foster 1995: 17). Utterance 245 contains the speech of the king, "I come to you O Nut: The king [name] has come to you ... I have given

[29] For general remarks about the formation of private names, see Ranke (1925).

[30] The lion names certainly allude to the individual's association or fealty to the king (see Ranke 1925: 77). See also page 267 for the epithets of the king as a lion.

[31] References for these animal names are given in Ranke 1925.

[32] A pun upon the phrase "the spirit (*kꜣ*)/bull (*kꜣ*) of the god Ptah."

[33] Perhaps pun upon the two similar words in the phrase: "arises" (*ḫꜥ*) and "bull" (*kꜣ*) in Thebes."

my father to the earth and I have left Horus behind me [ie: the living king has died and his successor has taken his place]. My wings grow strong like the wings of a falcon, my double plume is like the falcon's." The last phrase of the text refers to the often-attested allusion of the deceased king "flies to the horizon," in his form of the falcon-god.[34] In Utterance 273–74, King Unis is called "the bull of heaven," while in the Bentresh Stele (Persian or Ptolemaic period) he is the "bull firm of heart as the treads the arena" (AEL III: 91).

The association of the king with the fierce falcon continues to be a common theme in later literature.[35] Examples of such imagery from the Ramesside period include: "Like a divine falcon when he sighted small birds at a [hole]" (Edgerton and Wilson 1936: 16); "like a falcon among little birds and small fowl" (Edgerton and Wilson 1936: 61); "like a falcon, furious when he sees small birds" (Edgerton and Wilson 1936: 77); as claimed by the enemy: "He [the king] is after us like a divine falcon" (Edgerton and Wilson 1936: 83); "like a falcon among small birds, for he crushes millions" (Edgerton and Wilson 1936: 117). The bird similes were employed to refer to the king at various times of his life. He was said to be "king [while yet in] the egg" (Caminos 1954: 40), to emerge from the egg, an allusion to the Hermopolitian idea of creation, according to which all life originated from the egg of the "great cackler." The young king was also called a fledgling (AEL I: 116).

The association of Ramesses III with a bull[36] is conveyed by phrases such as "sharp of horns" (Edgerton and Wilson 1936: 10); his heart "bellows like a bull on the field of battle" (Edgerton and Wilson 1936: 16); he was "ready like a bull, mighty of arm and sharp of horns to attack the mountains in pursuit of him who assailed him" (Edgerton and Wilson 1936: 26, 37); "He is like a bull, standing on the field of battle, his eyes on his horns, prepared and ready to attack his assailant with his head" (Edgerton and Wilson 1936: 32); a "bull, sharp of horns, conscious of his strength" (Edgerton and Wilson 1936: 48, 90); a "bull, charging, relying upon his horns" (Edgerton and Wilson 1936: 57, 59); "strong young bull in the fray like Baal when he storms" (Edgerton and

[34] See for example in the Story of Sinuhe (Middle Kingdom), where the king "blew to heaven" (AEL II: 223) [like a falcon].

[35] Note that the same imagery was applied to the king's horses in battle: "His [the king's] horses are like falcons when they sight small birds," (Edgerton and Wilson 1936: 24).

[36] See chapter 12 for the imitation bull tail worn by kings (and gods), a physical reminder of this association.

Wilson 1936: 72); like "a sharp-horned bull when his conquest is effected" (Edgerton and Wilson 1936: 72) and "like a young bull, standing upon the field of valor" (Edgerton and Wilson 1936: 47). Ramesses II is called "Bull firm of heart when he treads the arena." (AEL III: 91) A Late period hieratic wisdom text relates that "his [the king's] speech is the seed of the bulls" (Jasnow 1992: 52, 54). More specific physical attributes, such as bull hoofs are also mentioned (Edgerton and Wilson 1936: 90).

These texts also associate the king with a lion: "A lion raging when he sees his assailant (Edgerton and Wilson 1936: 9); "like a young lion who recognizes his strength, heavy of voice, throwing out a roar ..." (Edgerton and Wilson 1936: 12); "raging lion" (Edgerton and Wilson 1936: 14 [very common]); "roaring like a lion, stirred up and raging," (Edgerton and Wilson 1936: 24); "like a lion, hidden and prepared for small cattle" (Edgerton and Wilson 1936: 26, 37)[37]; "a charging lion, wild, mighty, seizing with his claw" (Edgerton and Wilson 1936: 31–32); "a lion, heavy of roar, on the mountain tops, one fears from afar because of the fear of him" (Edgerton and Wilson 1936: 32); "an enraged lion, attacking his assailants with his paws" (Edgerton and Wilson 1936: 41); "swift-running lion" (Edgerton and Wilson 1936: 62); "strong and valiant lion who is the sole lord, for his claw is ready" (Edgerton and Wilson 1936: 76). The angry king was also referred to as raging "like a panther" (AEL III: 71).

The king could also be associated with lesser animals as when Amenemhet claimed that he was invisible like "a snake of the desert" (AEL I: 137) as he hid from enemies.

The Ramesside texts reflect that the king could simultaneously be compared to a variety of powerful animals and that the metaphors were heavily mixed in the effort to stress the superhuman power of the king. In the texts of the year 8 campaign of Ramesses III (ca. 1796 B.C.), the king was compared to a bull, a lion, a griffin, a falcon and leopard (Edgerton and Wilson 1936: 31–32); he was "like a ravaging lion, roaring [and rending] the wild cattle with his tooth" (Edgerton and Wilson 1936: 92). In the later story of Pedubastis, the king was said to roar "like a lion, like a bull bursting with strength" (AEL III: 155).

Texts that narrate scenes where the king hunts wild animals refer to

[37] For foreigners as cattle, see Edgerton and Wilson (1936: 82), where the enemies claim to be "like wild cattle who [pass] the door of the lion—he [the lion-king] regards hundreds of thousands of them as (mere) locusts." See also Edgerton and Wilson (1936: 83, 92) and text above.

the king in animal terms, although one might assume that human terms would be preferred to symbolize the power of humans over animals.[38] However, since the wild animals are metaphors for the enemies of Egypt (see further below), the scenes retain the same pharaseology as the battle scenes, where the king was compared to an animal, such as "he was like a bull, bagging herds of wild cattle" (Edgerton and Wilson 1936: 77).

Egyptian soldiers were compared to birds of prey who would swoop upon their enemies: "They [the troops] rushed to the [slaughter] like vultures, they attacked like panthers" (AEL III: 155).[39] In Pedubastis, the foreign enemies refer to the Egyptian solders as an "evil serpent" (AEL III: 155; Pedubastis), perhaps a humorous allusion to the ambivalent nature of the snake; hence that the armies of Egypt will protect their homeland.[40] The Egyptian troops could, like the king himself, be equated with bulls; "His [the king's] soldiers are like bulls, prepared ... on the field of battle" (Edgerton and Wilson 1936: 24).

Foreigners were associated with wild, and hence unpredictable animals (see Ritner 1993: 160, n. 743–44; Sørensen 1984: 13–14), as in the prophesies of Neferti, where the invaders from the east are likened to "a strange bird [that] will breed in the delta" (AEL I: 141). The use of bird metaphors is very common in the Ramesside inscriptions and the historical texts of Ramesses III are full of such allusions and to references of the evil foreigners being caught "like birds within a net" (Edgerton and Wilson 1936: 26, 31), and "his [the king's] arms were against them like a net" (Edgerton and Wilson 1936: 78).[41] Keper, the captured chief of the Meshwesh was "pinioned like a bird" (Edgerton and Wilson 1936: 92), and the assistance of the gods allowed the enemy to be ensnared "like birds" (Edgerton and Wilson 1936: 93). The defeated Sea Peoples declared "we were ensnared. They [the Egyptian troops] drew us in as if (in) a net" (Edgerton and Wilson 1936: 82). Such references, as well as those that refer to the enemy as a wild bull (see above) confirm that the scenes of the king hunting bulls and birds

[38] See however comments in the beginning of this chapter and Hornung in te Velde (1980: 77).

[39] In battle reliefs of Ramesses III they are likened to bulls (Edgerton and Wilson 1936: 24).

[40] See for example in Setne I (AEL III: 129) how the eternal serpent protected the magical book.

[41] See also Edgerton and Wilson (1936: 42) where the actual animal metaphor is not stated although "a net was prepared for them [the enemy], to ensnare them," suggesting again that the enemy was likened to birds. See also the discussion of the king likened to a falcon on pp. 265–66 where the prey of the falcon is usually small birds.

are allegorical scenes of the power of the king to defeat his enemies. The battle scenes of Ramesses III further refer to the foreign enemies as mice (Edgerton and Wilson 1936: 76), strangely one of the few occurrences of such associations,[42] and as locusts (Edgerton and Wilson 1936: 82).

Gods too were described by colorful expressions that evoked animals. This is not unexpected since the gods were themselves represented by animals or by mixed human/animal forms. The Leiden Hymns describes the god Amun Re as a "virile bull with the sharp horns" (J. Foster 1995: 66), although the bull is not an animal normally associated with Amun. The multi-faceted nature of the deity is expressed by "Divine falcon with extended wings, swift, seizing in a second whoever attacks him; Hidden lion with responding war-cry, who hugs to himself whatever comes under his claws; Strong bull over the city, lion over his people, swishing his tail at whatever annoys him (J. Foster 1995: 72), and "Fierce lion who rends with his claws, drinks down in an instant the blood and power of attackers; Strong bull, sturdy-backed, with crushing hooves on the neck of the enemy, tearing his breast; Bird of prey soaring on high, seizing whoever attacks him, who knows how to crush his limbs and bones" (J. Foster 1995: 78). The god Thoth, who is usually represented by a baboon or ibis, is called "strong bull of Hermopolis" (J. Foster 1995: 111), while Re is compared to one who "come[s] forth as the falcon, commander, with the two serpents intertwined on your brow" (J. Foster 1995: 47).

Other forms of religious texts also have colorful animal imagery. According to a Demotic oracle papyrus in Vienna dating to year 6 of Augustus, the Assyrian invasion was foretold by a lamb (Kákosy 1981: 142–43). After the lamb's death, the king (Bochoris, in whose time the story was set) ordered it to be mummified. In the Late New Kingdom text, Chester Beatty 1, which recounts the dispute between Horus and Seth, the disagreement was settled by the Ram of Mendes (Kákosy 1981: 152–53). Cats also appear in dream interpretation books: "If a man sees himself in a dream seeing a large cat, it is a good omen, and means that a large harvest will come to him" (P. Chester Beatty III in Malek 1993: 79).

The prevalence of animal imagery in ancient Egyptian literature is

[42] From the western perspective, mice would, on account of their diminutive size, be regarded with scorn. However the Egyptians may have had more admiration for mice as a symbol of the persistent small member of society. See especially the story of the lion and mouse in *Mythus* (AEL III: 156–59).

an indication of the awareness of the Egyptians of their physical surroundings, and how they incorporated those features into their culture. Animals took on human characteristics of language, thought and empathy, and in that humanized role they were used to illustrate the basic moralistic precepts that the Egyptians held so dear.

CHAPTER NINE

ANIMALS IN MESOPOTAMIAN LITERATURE

BENJAMIN R. FOSTER

Mesopotamian literature consists of formal written expression in the Sumerian and Akkadian languages. The earliest intelligible Sumerian literature dates to the middle of the third millennium B.C. For the next five hundred years or more, Sumerian literary works, ranging from short sayings and magic spells to narrative poems several hundred lines in length, were composed, studied, and copied primarily in urban centers of learning in southern Mesopotamia. After about 1700 B.C., Sumerian survived mostly as a language for liturgy, magic, and scholarship, with its more extensive hymnic and narrative works often provided with Akkadian translations. The earliest Akkadian literature begins about 2300 B.C. and continued to be produced until the Hellenistic period (fourth century B.C.). Akkadian was spoken throughout greater Mesopotamia and was a common language of written communication and expression throughout much of western Asia in the second and first millennia B.C. until replaced by Aramaic (B. Foster 1996a).

Mesopotamian literature responded to the presence and stimulus of animal life in human experience and imagination in different ways. Both Akkadian and Sumerian literature distinguish animals from human beings, demons, and gods. Ancient lexica ranged words for animals in lengthy lists. Divination, a major Mesopotamian scientific endeavor, made observations on animals' physical characteristics and behavior. In expressive and commemorative literature, animals shared with human beings attributes such as youth, old age, and mortality; pride, anger, aggressiveness, pain and fear; domesticity, discipline and vulnerability. Certain animals stood for human qualities, such as the lion or bull connoting bravery and aggression, and the bat fluttery alarm (see further Amiet 1956; Oppenheim 1978; Porada 1990; Westenholz 1996: 187, 191).

Like human beings, animals could be foreign or native, could have individual traits and emotions, families, and personal names (Bottéro 1956; G. Farber 1982; Lion 1996). As chattels, animals could be created, destroyed, bought, and sold; they could bring wealth, prestige,

protection, or healing. In contrast to humans, animals were not organized into a hierarchical society, showed no clear ethical or moral differentiations or gradations in capability or intelligence within the same class, and were protected by the gods rather than owing them service. Thus the individual animal was representative of a group, whereas the individual person was most often considered as such, leaving aside certain literary stereotypes (Postgate 1994).

Although manipulated and exploited as part of the divinely ordained physical world, animals could arouse in human beings a fear of the numinous as well as empathetic response. Such are the variations in references to animals in Mesopotamian literature through time and in different types of compositions, that coherent exposition must concentrate perforce on a few main themes and examples.

SCHOLARSHIP

Lexicography

An encyclopedic Babylonian lexicon, called HAR-ra *ḫubullu* ("HAR-ra [in Sumerian] Means 'Interest-bearing Loan' [in Akkadian]"), best known from its longest, standardized form of the first millennium B.C., groups words for animal life under the basic classification of animals of earth, air, and water (Landsberger 1960; 1962). Terrestrial animals (Tablet XIII) were subdivided into those used for domestic production and all others. Animals used in domestic production included sheep, goats, cattle, and donkeys (see Limet 1991). Each of these was listed in the order of words for male, female, and young. Interspersed were terms for age, color, maturity, variety, and domestic uses, as well as terms for diseases, characteristic behavior, and human-imposed states, such as being castrated or shorn, and natural states, such as references to losses or death. The productive animals were arranged in the list in descending order according to how many words were included for each type of animal; perhaps this was also an indicator of their perceived importance to human beings and their economy (in detail Wapnish 1995).

Animals that were not used in domestic production (Tablet XIV) have fewer distinctions for sex and none for age. These commenced with creeping animals, such as snakes, worms, and turtles; then turned to wild cattle and wild sheep; then dogs, lions, wolves; next an assortment of animals, some perhaps considered having less contact with the

human race, such as hyena, fox, moufflon, antelope, gazelle, rabbit, pig, rats and mice, mongoose, and lizards.

Some animals included here, such as the dog and pig, we would consider domestic but were perhaps not considered productive in the same way sheep, goats, or cattle were. The difference may lie, in the case of pigs at least, between production using living animals (fleece, dairy products, labor) and production requiring slaughter of the animal itself, "productive animals," in the Mesopotamian view, being of the former type. Perhaps this is the force of an obscure Sumerian proverb, "he saved up a lot then he slaughtered his pig" (B. Foster 1996a: 339; for pigs see in general Ungnad 1908; Brentjes 1962a). Some large predatory birds appear next in the list, for reasons not clear, then insects, including worm-like insects and winged ones, such as flies. No discussion or analysis of these categories has survived from antiquity, so one can only guess at the categorization (see also Waetzoldt 1988). The lexical evidence for fish (Tablet XVIII) includes many words that cannot be confidently identified with modern species (Salonen 1970; Landsberger 1962: 96–120). Certain riverine or marine animals were included in the category "fish" (M.E. Cohen 1973: 205; W. Farber 1974) because of their habitat.

A lexical list of Sumerian words for different kinds of birds was transmitted as a separate composition in the third millennium B.C. (Pettinato 1978; 1981: 105–23). Names of birds were studied in Babylonian schools (B. Foster 1996b) but numerous words for birds occur in administrative documents that do not appear in the encyclopedic list (Owen 1981), just as some words in the list are not known from elsewhere (see in general Brentjes 1962c).

The Mesopotamian lexicon of terms for animals, fish, and birds was more than a random list in that it was based on an implicit typology, but less than a systematic treatise on non-human, mortal forms of life (from which demons or monsters were largely excluded), nor did it include all words in common usage.

Our category "wild animal" was conveyed in Akkadian by *būl ṣēri* or *umām ṣēri* "animals of the steppe," implying in the first instance quadrupeds. More specific habitats, such as marsh or fresh or salt water, were also mentioned in connection with birds and fish. Wild animals could also be referred to as "of the mountain" (that is, "foreign") or occasionally by the name of a country, for example, "the elephant of Barashe" (a land in present-day Iran or Pakistan) or "the ox of Lullubum" (a land in present-day Kurdistan), but not all of these terms

are found in the lexica. The concept of "pet animal" is poorly attested (Limet 1997).

Divination

The most extensive scholarly writing concerned with animals is found in omen collections. Divination was the principal Mesopotamian science of the second and first millennia B.C. (Bottéro 1974). In the mantic world view, all natural phenomena, including the appearance and behavior of animals, could be portentous for the individual observer (Limet 1993b). Systematic compilations of animal omens ran to thousands of lines of text, of which the largest single group is found in the great series of terrestrial omens known as *šumma ālu ina mēlê šakin* ("If a City is Situated on an Elevation" Moren 1978). The omens were based on human reactions, such as fear, to an encounter with an animal; distinctive appearance of the animal; its behavior, including its motion or position; different sounds it could make; or the animal's reaction to the human observer, such as baring its fangs or rubbing affectionately.

The sequence of the terrestrial omens was different from that of the lexical encyclopedia. The fundamental parameters here seem to proceed from the house outward and from looking down (insects) to looking outward (cattle, wild animals) to looking upward (birds), but logical categories, if present, are not always readily apparent. "If a City" included, in sequence, lizards and lizard-like creatures (skink, gecko), mongoose, various kinds of mice, and shrews; succeeding tablets dealt with ants, moths, grasshoppers, caterpillars, crickets, chameleons, and wood-eating insects. There are large gaps in the remaining sequence so many entries are lost. Subsequent preserved portions include sheep, oxen (Limet 1993b: 124–25), donkey, and horse (Limet 1993b: 125), then wild animals, such as the wild cow, elephant, monkey, lion, wolf, gazelle, and fox. The wild animals are mostly described as seen, without the minute gradations of appearance and behavior typical of domestic species and household pests. Cats (Brentjes 1962b; Limet 1993b: 123–24; 1994) and dogs (Limet 1993b: 120–22) follow, then pigs. Of what must have been extensive material about birds, only small segments remain (Moren and Foster 1988). Tablets concerning fish and aquatic life have not survived (Moren 1978).

Another major omen collection, *šumma izbu* ("If a Monstrous Birth"), includes numerous cases of monstrous births to animals. Unlike the terrestrial omens, which pertained to the individual observer, these were

considered to have national significance, bearing on the well-being of the king and the stability of society and government (Leichty 1970; Moren 1980; for more see chapter 13).

Although the observations in the protases of the omens can be exact and detailed, and in some cases, such as dogs and sheep, very numerous, the purpose of the description is to correlate observation with prognosis for the human observer. Animal omens are not, therefore, "natural history" and cannot profitably be compared to the educational and entertaining lore of later Greek, Latin, and Arabic works on animals, that focus on their inherent interest or usefulness to the human race.

Natural History and Bestiary

An example of "natural history" combined with theology might be the "Birdcall Text" (Lambert 1970). This lists cries of birds, identifies the birds that make them, and associates a god with each bird. The technique and approach of this composition may be compared to those of another that identifies stones by first describing their appearance then giving their names (*abnu šikinšu* "The Stone that Has the Form of a ..." [no modern edition or translation]), although the stones are not associated with different gods. No comparable text is known for animals. A fragmentary "snake list" may be the remains of a Mesopotamian bestiary, but this is uncertain (Reiner 1995: 29). Other short lists of words for animals, evidently excerpted from ancient lexica, may have had some educational purpose (Sjöberg 1996).

LITERATURE AND MYTHOLOGY

Animals and Civilization

Animals figure in Mesopotamian mythological narratives both as subjects and as terms of reference or comparison. A belief that animals and humanity belonged to competitive or complementary realms of being, corresponding to modern ideas such as "animal kingdom," is expressed in various passages in Mesopotamian literature. A Sumerian mythological passage, for example, describes a paradisiacal world as one without destructive and obnoxious animals:

> In those days, there being no snakes, no scorpions,

No hyenas, no lions, no dogs, no wolves,
Neither fear nor terror:
Humanity had no enemy!
(Adapted from Alster 1983: 53)

In another such passage:

In Dilmun (a faraway land) the crow does not caw,
The dar-bird does not screech "dar-dar!"
The lion makes no kill,
The wolf snatches no lamb,
The dog has no thought to rush the kid,
The pig has no thought to devour the barley,
Nor, when the widow spreads out malt on the roof to dry,
Do the birds of heaven come to eat that malt,
Nor does the dove bobble its head (to eat good grain).
(Adapted from Alster 1983: 63)

A realm of animals pristine and unpolluted by contact with humanity is imagined in Akkadian diviners' prayers celebrating the cultic purity of the sacrificial beast (see further Limet 1989; 1993a: 371):

... a pure fawn, offspring of a gazelle, whose eyes are bright-hued, whose features are radiant, a pure, tawny, sacrificial animal, offspring of a gazelle, whose mother bore him in the wild, and the wild set its kind protection over him. The wild raised him like a father and the pasture like a mother ... He would eat grass in the wild, never would he want for water to drink at pure pools. ... He who never knew a herdsman ... in the steppe, from whom the the lamb was kept away ... (After B. Foster 1996a: 663).

Celebration of a pristine landscape or of animal life unaffected by contact with the human race is mostly restricted to glorification of animals about to be killed or landscapes about to be conquered for the first time. Their beauty or purity serve only to point up what is about to befall them. Descriptive references to habitats of specific wild animals are scattered throughout Mesopotamian literature, with or without implied contrast to human settlement (Salonen 1973: 13–18; 1976: 15–16).

In the Akkadian Epic of Gilgamesh, a wild man, Enkidu, runs and forages with wild beasts, but when he is seduced by a woman, he loses his virginal strength and his animal comrades reject him:

When they saw him,
Enkidu, the gazelles shied off,
The wild beasts of the steppe shunned his person.
(B. Foster 2001: 9).

Animals could take advantage of disorder in human society to break into normal spheres of human activity:

> In your fattening pens, established for rites of purification,
> May foxes, who lurk about ruin heaps, drag their brushes.
> In your city gate, established for the land,
> May the owl, bird of woe, build its nest.
> (After Cooper 1983: 63)

> I (Erra) let outlandish beasts into the shrines,
> I block access to any city where they appear,
> I send down beasts of the highlands,
> they bring the stillness of death to the thoroughfares,
> I cause beasts of the steppe not to stay in the steppe,
> but to traverse the city street.
> (B. Foster 1996a: 773)

Some animals are portrayed in literature as entirely inimical to the human race. These include poisonous snakes and the scorpion (Van Buren 1937–39), which are exorcized in magic spells.

> It (the serpent) came in by a crevice,
> It went out by a drain.
> It struck the "gazelle" (human infant?) while it slept,
> It secreted itself in a withered oak.
> The serpent lurks in a beam,
> The serpent lurks in the wool.
> (B. Foster 1996a: 128)

In one ghastly vignette, a hungry worm rejects fresh fruit for its diet and accepts as its habitat the human gums, thus bringing toothache into the world:

> "Set me to dwell between tooth and jaw,
> That I may suck the blood of the jaw,
> That I may chew on the bits of food stuck in the jaw."
> (B. Foster 1996a: 863)

Proverbs and Fables

Animals are personified in various short prose compositions in Sumerian, often referred to as "fables" (Gordon 1962; Falkowitz 1984). Like their Greek counterparts, the Sumerian fables take the form of a story involving conflict and resolution, including both narrative and dialogue, written in a simple, unornamented style. The Sumerian fables, however, have no expressed moral. In some of these, one animal outwits another despite its seemingly insuperable advantage:

> When the lion caught the weakling goat, she cried, "Let me go and I will give you my friend, the ewe, when we reach the fold." "If I am to let you go, tell me your name!" The goat answered the lion, "You do not know my name? My name is, 'I-Will-Make-You-Smart'." When the lion came to the fold he roared, "I let you go." She answered from the other side of the fence, "You have indeed become smart—in fair trade for no sheep!" (After Falkowitz 1984: 6; differently Alster 1975: 214; 1997: 128).

> Once there were nine wolves, but ten sheep, one too many to divide among them. When the fox came upon them, he said, "Let me divide the shares. For you, being nine, there is one. I, being one, will take nine. That is my preferred share." (After Falkowitz 1984: 22; Alster 1997: 133.)

Similar Sumerian compositions may consist of a vignette or observation, rather than a story. Some of these may be excerpts or references to larger pieces, whereas many seem sufficient to stand alone (examples after Gordon 1962; Alster 1997; see also Alster 1975: 212; Falkowitz 1984: 13). One group centers around the fox, vain, cowardly, and deceitful:

> The fox, having urinated into the Tigris river, said, "I have raised the spring flood."
> The fox, having urinated into the ocean, said, "My urine is the whole ocean."
> The fox had a staff with him, "Whom shall I beat?"
> The fox had a writ with him, "Whom shall I sue?"
> The fox gnashed his teeth, but his head was trembling.

The dog could be troublesome, greedy, and ungrateful, but also affectionate and protective:

> While the ox plows, the dog soils the furrows.

> While the ass was swimming across the river, the dog held on tight, saying "When is he going to climb out and be eaten?"

> [The bitch] said, "Be they yellow, be they brindled, I love my own children."

> The dog understands "Take it!" but does not understand "Put it down!"

For other animals there are pointed vignettes:

> The ass eats its own bedding.

> A cat for its thinking, a mongoose for its action.

> When the horse had thrown his rider, he said, "if this is always to be the weight upon me, I'll soon collapse."

The universal appeal of these fables and sayings leads some to suggest that they derived from popular oral tradition set down in writing for didactic purposes. Indeed, the Sumerian fables are preserved in collections of material used for teaching the Sumerian language in Old Babylonian schools in the first half of the second millennium B.C. These collections included proverbs and set pieces, some of them satiric in nature. Since they offer a high concentration of entertaining narrative focused on personified animals, these selections may have been deemed particularly suitable for the apprentice.

Personified Animals in Extended Narratives

Animals appear as principal characters in more extended compositions, including debates and dialogues and longer fables. These are sometimes formal debates or contests in which a judgment is rendered at the end, by a king or god, in favor of one of the contestants. Association of birds with noise, alluded to above in the "paradise myth" and in the "Birdcall Text," is developed at length in a Sumerian debate between a bird and a fish. The bird built her nest in a canebrake, while the fish spawned in the marsh. The fish, evidently annoyed by the bird's cries, castigates her in a long speech, of which a few lines may be quoted:

> Bird, you know no shame; you fill the courtyard with your droppings,
> The sweeper-boy, who cleans the courtyard, chases you with ropes.
> By your call the household is disturbed; they flee from your din! ...
> With your ugly screech you disturb the night; no one sleeps well.
> (After Vanstiphout 1997b: 582)

The bird, unmoved, reproaches the fish for her hideous appearance and rank smell:

> Your mouth is a heap; though your snout goes around in a circle, you can't see behind you.
> Your hips are amputated, not to mention your arms, hands, and feet—try to tell your neck from your feet!
> Your stench is revolting, you make people gag, they wrinkle up their noses at you!
> No trough would hold the kind of slops you eat,
> And he who has carried you hates to let his hand touch his skin!
> (After Vanstiphout 1997b: 582)

Although the fish sings her own praises as food for gods and humans, their dispute turns to violence as the fish vandalizes the bird's nest and the bird seizes the perfidious fish, treating her to a paean of self-praise. Finally the two agree to arbitration by the king, who finds in favor of the bird.

The theme of competition between bird and fish is developed also in the story of the Heron and the Turtle. The turtle attacks the heron's nest, evidently out of jealousy. The aggrieved bird denounces the turtle:

> The turtle, an oven brick,
> who committed an atrocity,
> (Who lives) in the drainage ditch,
> who committed an atrocity,
> Who passes his time in the mud like a hoe,
> who committed an atrocity,
> A filthy dirt basket,
> who committed an atrocity ...
> (After Gragg 1997: 572)

The ending of the story is damaged but justice may be pronounced in favor of the heron. The vicious turtle figures also in the story of Ninurta and the Turtle (Alster 1972), in which its bite restrains even the warrior Ninurta.

In another Sumerian dialogue, a sheep compares herself favorably to wheat as beneficent to the human race:

> In his robe, my cloth of radiant wool,
> The king is splendid on the throne,
> My flanks glisten on the persons of the great gods!

Wheat answers:

> Every day your number is reckoned up
> And your tally-stick set out,
> So your shepherd knows how many ewes are left, how many lambs,
> How many goats, and how many kids!
> When the wind blows through towns,
> And the mighty blast is buffeting,
> They have to build a shelter for you.
> But when the wind blows through towns,
> And the mighty blast is buffeting,
> Then do I, as an equal, stand up to the storm.
> (After Vanstiphout 1997a: 576–77)

In the end, judgment is pronounced for wheat.

Similar compositions may have existed in Akkadian but survive only in fragments. One tells of a contest between a dog and a wolf, though

the outcome is uncertain. In one episode, the dog describes his importance for herding sheep:

> I am mighty in strength, the talon of a thunderbird, the fury(?) of a lion,
> My legs run faster than birds on the wing.
> At my loud outcry mountains and rivers dry up(?),
> I take my onerous place before the sheep,
> Their lives are entrusted to me, instead of to shepherds or herdsmen,
> I am sent off on my regular path in the open country and the watering place, I go around the fold.
> At the clash of my fearsome weapons I flush out ...,
> At my baying, panther, tiger, lion, wild cat take to flight,
> The bird can[not] fly away nor go on course!
> (B. Foster 1996a: 821)

A lengthy Akkadian narrative poem, called today "The Etana Story," develops a contrast between a perfidious bird, an eagle, and a serpent (B. Foster 1996a: 437–57). The eagle wrongs the serpent, thus reversing the pattern seen in the Heron and the Turtle and the Bird and Fish dialogue, wherein the bird was the nobler. In this story, the eagle and serpent swear an oath of friendship, then build their nests in the crown and roots of the same tree. They even share the take from their hunting, though one version has only the serpent so generous. Once when the serpent is away hunting, the eagle descends and devours her young. The serpent's pleas for justice are heeded by the sun-god Šamaš, patron deity of oaths, who instructs the serpent how to trap the eagle and take revenge. Burrowing into a tempting carcass, the serpent seizes the eagle when she comes to feed on it and casts her into a pit from which she cannot escape. The eagle is eventually rescued by Etana, the first king, who has not yet been able to engender an heir. He asks the eagle's help in securing the plant of birth. Etana rides up to the sky, clutching the eagle, but loses courage at the dizzying height and returns to earth. The outcome of the story is unknown.

Animals in Figurative Language

Animals, birds, and fish are found throughout Mesopotamian literature as similes and metaphors. As with the personified animals in fable or the animals observed in omens, figurative references to animals express reactions to the animal referred to, for example fear, amusement, or contempt. Some allude to self-evident characteristics of the animal, transferring them to the human sphere.

Human reactions to animals are implied in similes like the following: "May (the people of) Susa toward [An]shan's [mountains] salute you like tiny mice" (on account of their great distance below the messenger; Jacobsen 1987: 286); "At the (thunder)bird's crying woe, its wife's setting up a wail, did the Anunnaki, the gods of the mountain ranges, go (scurrying) like ants into the cracks in the ground ... " (Jacobsen 1987: 326); "'I (Lugalbanda) howled like a wolf, ate pasture safely, I picked over the ground like a turtle dove, ate the mountain acorns'" (Jacobsen 1987: 336). The richness of their similes shows that Sumerian epic narratives developed elaborate figurative passages based on perceptions of the behavior of animals. Similar figures abound elsewhere. In an Akkadian spell, for example, a successful prostitute hopes, "as birds flutter around a serpent coming out of his hole, so may these people (the customers of her brothel) fight over me!" (B. Foster 1996a: 883).

Typological analysis of such figures in restricted groups of texts show what were considered the commonplace or self-evident characteristics of specific animals. In Sumerian literary similes, birds, for example, flock together, wheel in the air, fly away in fear or forever, rise suddenly into the air, and catch their prey with talons; reference is also made to human techniques for snaring birds as a figure for entrapment (Black 1996). Serpents lurk, hiss, creep, spew venom, and have frightening eyes and mouths (Heimpel 1968: 464–512). Normally the self-evident characteristics of animals transfer or link humanity to the gods or the animal world, to the detriment of humans and gods, in that their behavior is animal-like, hence out of type and degrading: "Like sheep, (the gods) filled a streambed, their lips were agonized with thirst" (B. Foster 1996a: 183, Akkadian Flood Story); "[The gods sniffed] the savor, They were gathered [like flies] around the offering" (B. Foster 1996a: 183, Akkadian Flood Story). Also in the Akkadian Flood Story, the drowned human race is compared to dragonflies on the water's surface (B. Foster 1996a: 182).

Ants are the insects most commonly used in similes in Mesopotamian literature: "They, like ants in distress, made their way over most difficult trails" (Luckenbill 1927: 2:82; compare for Sumerian Heimpel 1968: 514). Other insects are occasionally referred to: "Let pinions and wing feathers dance about like butterflies," said of Anzû, a bird-like monster slain in battle (B. Foster 1996a: 475; compare for Sumerian, Heimpel 1968: 515; Lugale Poem [Van Dijk 1983: 64, 108 = Jacobsen 1987: 241 "like moths he crushed their skulls"; and 257 "I might have broken

you as (one would) butterflies."]).

When comparison of a human with an animal is intended as positive, the transferred attributes are normally surpassing strength, overwhelming violence (Seux 1967: 250), speed, or sexual prowess: "In your heart lies a dog, lurks a pig!" (Akkadian love charm, B. Foster 1996a: 143). These were areas in which specific animals were observed or considered superior to a weaker humanity, hence, by anthropomorphism, these superiorities were transferred to the gods: (Ninurta) "wild bull with head held high" (Akkadian hymn to Gula; B. Foster 1996a: 487). Comparisons formulated with greater complexity draw attention away from the subject compared to the term of comparison and to the figure itself: "Like a lusty young boar, mounting his mate with innards aswell, who lets out wind at his mouth and behind, he cried out a lament, saying 'Woe is me!'" (B. Foster 1996a: 722). The modern reader can only guess at the ancient expectations—at what point did a figure assume increased importance in a discourse so as to gain autonomy from the subject of comparison? The case just cited seems at once dramatic and inelegant. If the cry of woe is compared to orgasmic moaning, the purpose of the allusion to porcine flatulence is less clear. Was this construed as a sign of vigor or was it a sign of the man's extreme agitation, in the grip of which he scoops up dirt from the street in his mouth, puffs and pants?

In Sumerian court narrative poetry of the outgoing third millennium, animal similes may have been an expectation, the response to which might be creating a figure more elaborate than "hiss like a snake" or "charge like a bull." For example, in a Sumerian narrative poem, "Lugalbanda's brothers and comrades dismissed what he told them from their minds, huddled together as if sparrows at massing storm clouds, and like the young one of the *gamgam*-bird lying in its nest, they were feeding him and giving him to drink, and were making holy Lugalbanda's illness leave him" (Jacobsen 1987: 336).

If length and complexity of the figure were two means to draw attention to the term of comparison, a third was recourse to unusual or rare animals to refurbish similes considered clichés. This mode of elaboration has been identified in Assyrian royal inscriptions of the mid-first millennium B.C., where the inventory of figures was enlarged and expanded in successive reigns, as if responding with originality to a sense of rising or cloyed expectation in the audience (D. Marcus 1977; in general Ponchia 1987).

Speaking to Animals

Direct addresses to animals are rare in Mesopotamian literature. The most elaborate is a fisherman's ditty called "The Home of the Fish," intended to lure fish into a trap, in the manner of the English humorous rhyme "'Won't you come into my garden?' said the spider to the fly ..." (Thomsen 1975).

> In the house, there is beer, there is good beer,
> There are sweet beer and honeyed cakes, (laid out) as far as the reed fence.
> Let your acquaintances come,
> Let your loved ones come,
> Let your father and ancestor come,
> Let the sons of your elder brother and the sons of your younger brother come,
> Let your little ones and your big ones come,
> Let your companions and friends come,
> Let your brother-in-law and your father-in-law come,
> Let the crowd around your entryway come,
> Nor leave your neighbors out, not even one of them!
> (After Civil 1961: 157)

So too direct conversation or interaction between humans and animals, or a story hinging on the relationship between a human and an animal friend or companion (Limet 1997), as with the wild man Enkidu and his beasts, is not developed in Mesopotamian literature beyond the folkloric motif of a gift conferring understanding the speech of animals and consequences of that gift:

> He (the sorcerer) spoke to the cow, he conversed with her as with a human being,
> "Cow, who will eat your cream?
> "Who will drink your milk?"
> "(The goddess) Nisaba will eat my cream,
> "(The goddess) Nisaba will drink my [milk]."
> (After Berlin 1979: 51)

Another folkloric motif, in which a god, holy person, or the like, disguises himself as an animal and then rewards a human being who recognizes him in the course of conversation, is developed in the Sumerian story of Enlil and Namzitarra (Civil 1974–77), wherein Enlil disguises himself as a raven (or crow) and talks with Namzitarra, a human being, afterwards bestowing upon him gifts and success.

MAN THE HUNTER, COLLECTOR, AND TAMER

Animals as denizens of a landscape to be penetrated, conquered, destroyed, or transported belong to a cluster of cultural concerns reaching far beyond expressive literature. These include propagandistic language, art, and architecture intended to sustain and present the power of political hierarchies and claims to rulership (M. Marcus 1995b). Royal inscriptions make frequent use of the trope of the king as hunter, bringing home food and protecting the home from marauders (Mumford 1960: 231, 1961: 21–25), skilled in the specialized weaponry of the craft (Seux 1967: 23). This trope was elaborated in Mesopotamian imperial ideology and the literature that served it by presenting animals in their natural state as existing outside the boundaries of established order, hence to be slaughtered in ritualized hunts as a sign of power and superiority of the ruler (Heimpel 1976–80; Limet 1993a; Liverani 1990: 132; Salonen 1976). Assyrian royal inscriptions in particular focus on the number and ferocity of the prey or its rarity and exotic character (Reade 1979; Engel 1987). As an example, one may cite a passage in a thirteenth century Assyrian royal inscription, in which the king Tiglath-Pileser I boasts of a splendid bag of elephants:

> I killed ten strong bull elephants in the land Harran and the region of the River Habur (and) four live elephants I captured. I brought the hides and tusks (of the dead elephants) with the live elephants to my city Assur. By the command of the god Ninurta, who loves me, I killed on foot 120 lions with my wildly outstanding assault. In addition, 800 lions I felled from my light chariot. I have brought down every kind of wild beast and winged bird of the heavens whenever I have shot an arrow. (Grayson 1991: 26; compare Brentjes 1961).

The theme of animals waiting to be slain is developed in belles lettres as well, especially in an Assyrian poem that treats mountain peoples as bestial, unwary animals ripe for royal violence and slaughter (see also Reade 1979: 30).

> The hunter plans battle against the donkeys,
> He whets(?) his dagger to cut short their lives.
> The donkeys listened, they gamboled alert,
> The hunter's terror had not come down upon them.
> They were bewildered, "Who is it that stalks us?
> "Who is it, not having seen who we are,
> who tries to frighten us all? ... "
> Even without sunshine a fiery heat was among them,

> He slashed the wombs of the pregnant, blinded the babies,
> He cut the throats of the strong ones among them,
> Their troops saw(?) the smoke of the (burning) land ...
> (B. Foster 1996a: 249–50)

Just as wild animals could symbolize life beyond the pale of civilization (Wiggermann 1996), so too creation of zoos, game parks, and display of rare and exotic beasts were referred to in literature as signs of great power: "monkeys, huge elephants, water buffaloes, beasts of faraway places, jostle each other in the wide streets, and dogs, panthers, mountain goats, and *alum*-sheep full of long wool ... make splendid the city Agade," (Jacobsen 1987: 361, see also Cooper 1983: 51).

This phenomenon is best known from Assyrian commemorative inscriptions, which refer to parks and zoos as symbols of their kings' control, transferral, and technical manipulation of landscapes and of their ability to create "paradises" or gardens of natural elements rearranged to suit human pleasure, recreation, and curiosity (Fauth 1979; Wiseman 1983; Stronach 1990). Exotic animals could therefore symbolize the extent of royal dominion (Hurowitz 1988), worthy gifts between great kings of all periods or as objects of booty (Elat 1978; Steinkeller 1982: 253; Lion 1991; 1992; Wiggermann 1996; K. Foster 1998). Gifts of both common and exotic animals were worthy of the gods too, as Enlil rushes to his prospective bride, Sud,

> Quadrupeds, from goats to donkeys, that multiply freely in the steppe,
> The countless creatures in the uplands were chosen:
> Wild oxen, red deer, elephants, fallow deer, gazelles, bears, wild sheep, and rams,
> Lynxes, foxes, wild cats, tigers, mountain sheep, water buffalos, monkeys.
> Thick-horned fat cattle that bellow,
> Cows and their calves, wild cattle with broad horns, led by azure ropes,
> Ewes and lambs, goats and kids, romping and fighting,
> Large kids with long beards, pawing with their hooves ...
> (After Civil 1983: 60)

The training of animals is seldom referred to in literature, beyond passages in commemorative inscriptions, such as when the Assyrian king Sargon II discusses horsemanship in a defeated land: "The people who live in that district are without equal in the whole of Urartu in their knowledge of riding-horses. For years they have been catching the young colts of (wild) horses ... They do not saddle them but (whether) going forward, turning to one side, or turning around, (as the tactics) of battle require, they are (never) seen to break (away) from the harness" (after

Luckenbill 1927: 2:84; see also Limet 1992; 1995). Manuals on horse training were copied by scribes, presumably as exercises in scholarship rather than as an actual manual for trainers (Ebeling 1951; for a comparable work in Hittite, see Starke 1995). Training of other animals, such as bears, is known from administrative documents (Gelb 1975) but is not referred to in literature. Animals interred in human burials include harnessed equids and possibly one instance of a dog (Limet 2000).

ANIMALS AND HUMAN DIET

Reference to consumption of animals or birds as signs of superior diet or feasting are found in commemorative inscriptions of all periods, most notably in the "banquet" inscription of Assurnasirpal II (Grayson 1991: 292), but is less common in literature (see further Bottéro 1980–83; 1995; Limet 1988, 1989). The best-known example is the humorous story of the Poor Man of Nippur (B. Foster 1996a: 813–18) in which a poor man decides to sell his clothes for mutton, has enough only for a billy goat, but is then swindled out of his goat by the mayor when he seeks some means to avoid inviting his relatives and neighbors to the resulting feast.

ANIMALS AS OBJECTS OF HUMOR

Royal preoccupation with prestigious animals is satirized in a humorous Assyrian literary composition purporting to be a letter of the Sumerian hero, Gilgameš, in which he makes gargantuan demands of his heroic correspondents:

> ... "send ... 70,000 black horses with white stripes, 100,000 mares whose bodies have markings like wild tree roots, 40,000 continually gambolling miniature calves, 50,000 teams of dappled mules, 50,000 fine calves with well-turned hooves and horns intact ..." (B. Foster 1996a: 805).

Animals figure in other satiric texts, one a spoof incantation in which a man whose sleep is troubled by a bleating goat wishes that its ear be stuffed with its own dung in an "ear-for-an-ear" reprisal: "That goat, instead of falling asleep, let it drop dead!" (B. Foster 1996a: 140). Another is a parody of a legal document, in which a party of birds and winged genies conclude a sale contract for a parcel of real estate at the

approaches to Hell, with bird seed figuring in the sale price (B. Foster 1995: 375). A plaintive Sumerian letter, purportedly written to his mother by a caged monkey, is apparently a humorous reflex of the practice of royal display of exotic beasts and a rare example of empathy with the captured animal in an unfamiliar environment: "I am being fed on nothing but offal! Don't leave me to die of hunger for fresh bread and fresh beer! Send me some by special courier. The situation is desperate!" (see S. Dunham 1985: 244). This and other references to monkeys, as well as their portrayal in Mesopotamian art, show that they were objects of both curiosity and amusement (S. Dunham 1985; see also Rutten 1938).

AFTERWORD

As Mesopotamian writers observed animals, they appreciated their fascinating variety in appearance and behavior and worked out systematic means to record these. They heard and documented their sounds and described their habitats. They saw too the will of the gods writ large and animate in them. They saw them as sources of sustenance and support, prestige and entertainment. They reflected on the complex relationship between animals and humans. Using animals, they expressed in literature what they saw in themselves.

CHAPTER TEN

ANIMALS IN THE LITERATURES OF SYRIA-PALESTINE

ODED BOROWSKI

Written material from ancient Syria-Palestine that may be considered literary in nature has been preserved mainly in the texts from the Late Bronze Age city of Ugarit (modern Ras Shamra in Syria) and in the Hebrew Bible. While the texts most immediately relevant to a discussion of animals are the more practical documents (texts dealing with sacrifices, taxes and the like), animals also play an important role in written sources that are defined as literary (both poetry and prose narrative), including myth, wisdom literature, and historical accounts. These literary works attest to the richness of the animal world in ancient Syria-Palestine, but the value of these accounts in assessing the true nature of human-animal interaction in Syro-Palestinian antiquity is limited. In the case of Canaanite sources, this is due to the paucity of written materials. In the case of the biblical literature, our limited understanding can be traced to the biblical writers themselves who, in manipulating animal images to meet literary and religious ends, may have skewed the real picture. The following discussion touches on some of the high points.

THE MENAGERIE[1]

Solomon's erudition in part manifested itself in a vast knowledge of land mammals, birds, reptiles and fish (1 Kgs 4:33), the four salient categories of animals in the Hebrew Bible (Deist 2000: 107). But the only systematic presentation of animals in Syro-Palestinian sources occurs in the biblical lists of clean and unclean animals (e.g., Lev

Translations of all biblical passages follow the New Revised Standard Version, New York: HarperCollins, 1989 unless otherwise indicated.

[1] A list of Hebrew (and cognate) words for animals is available in Firmage (1992: 1152–56). The dietary codes and their meaning are discussed in detail in chapter 15.

11; Deut 14:3–21) and in the instructions concerning sacrifices (e.g., Lev 1–6; Num 7:87–88). These biblical "catalogs" are neither scientific nor scholarly in purpose, having been compiled rather as religious or dietary codes of behavior. As such, however, they are fairly comprehensive. The dietary code in Lev 11 begins by listing the land mammals, followed by animals that live in the water, then birds, insects and, finally, rodents, reptiles, and other noxious creatures. These lists consider wild and domestic animals alike, and wildness plays no obvious role in defining food taboos. Deuteronomy's list of clean animals includes, for example, seven wild ruminants (deer, gazelle, roe deer, wild goat, ibex, antelope and mountain sheep) that are edible beside cattle, sheep and goat (14:5).

The sacrificial lists, on the other hand, almost exclusively comprise domestic animals. Sheep and goats of both sexes, particularly young ones, are most frequent. Large cattle and animals specially fattened are included in the sacrificial lists and in other literary texts concerned with sacrifices (e.g., Isa 34:6), and burnt offerings of pigeons and turtle doves were also prescribed (Lev 1:14–17). A similar list of animals for sacrifice appears in a Ugaritic text devoted to the celebration of the grape harvest and wine production held in the autumn. It includes a variety of birds, male and female sheep and goats, and large cattle (Levine, de Terragon and Robertson 1997: 299–301), but nothing like a systematic cataloguing of animals is known from Ugaritic written sources.

PRACTICAL ANIMALS

From a land "flowing with milk and honey" (Exod 3:8), one might expect numerous literary references to animals in daily life. The biblical sources do not disappoint: Donkeys, camels, cattle, mules, and sheep all figure in lists of booty, and numerous references to their daily uses demonstrate that they were the mainstay of the economy of ancient Syria-Palestine. Formulaic expressions of wealth included cattle, donkeys, sheep and sometimes camels (Gen 12:16; 30:43; 32:7; Exod 9:3; 22:9; 1 Sam 22:19; Job 1:3; Ezra 2:67). A proverb sums up the importance of livestock to the livelihood of the Israelites: "Where there are no oxen, there is no grain; abundant crops come by the strength of the ox" (14:4). The Ten Commandments require that livestock also rest on the sabbath, and the just

person, when coming upon the ox or donkey belonging even to the enemy, must return it (Exod 23:4). A few domesticated animals captured the imagination well enough to be given play in the literature.

Equids

Equids (donkey, mule, horse) in Syria-Palestine were generally highly prized animals. The Bible is replete with references to the donkey, which was well-suited to the terrain and climate of the region and was thus essential to an individual's wealth (Gen 12:16; 24:35; 30:43; 32:5; Job 1:3) and economic survival. Donkeys were the primary means of transport of humans and goods alike (Borowski 1998: 90–99). Joseph's brothers carried sacks of grain on donkey backs from Egypt to Canaan (Gen 42–45, esp. 42:26–27; 43:24; 44:3, 13; 45:23). The expression "to saddle a donkey" was synonymous with beginning a journey (Deist 2000: 159). The donkey's high value is equally apparent in the Ugaritic Legend of Aqhat, as the hero's sister, Pagat, prepares the animal to carry their father to the drought-stricken fields:

> Weeping she saddled the donkey,
> weeping she harnessed the ass,
> Weeping she lifted her father,
> placed him on the back of the donkey,
> on the beautiful back of the ass.
> (Pardee 1997a: 352; Parker 1997: 69).

Horses were the consummate prestige animal. Ugaritic literature mentions chariot horses (see, e.g., Kirta [Pardee 1997d: 335–37; Greenstein 1997: 21–23]), and a series of Ugaritic veterinary texts dealing with the care of sick horses illustrates the importance of the horse and its unique role (C. Cohen 1997: 361–62; Cohen and Sivan 1983). If literary references are any guide, the horse's role among the Israelites was limited to military uses, in both the cavalry and the chariotry (Borowski 1998: 99–108). It is in this capacity that it enters the literature:

> "Do you give the horse its might?
> Do you clothe its neck with mane?
> Do you make it leap like the locust?
> Its majestic snorting is terrible.
> It paws violently, exults mightily;

it goes out to meet the weapons.
It laughs at fear, and is not dismayed;
it does not turn back from the sword.
Upon it rattle the quiver,
the flashing spear, and the javelin.
With fierceness and rage it swallows the ground;
it cannot stand still at the sound of the trumpet.
When the trumpet sounds, it says 'Aha!'
From a distance it smells the battle,
the thunder of the captains, and the shouting."
(Job 39:19–25; cf. Isa 30:16)

Such was the desirability of these animals that Arsham, Persian satrap of Egypt sent a letter from abroad commissioning equestrian statues to be made for him by an artisan from Elephantine (Lindenberger 1994: 87 #46).

Dogs

In biblical literature, the multiple uses of the dog are only hinted at through prophetic metaphors. It is almost exclusively used in negative images. Israel's leaders are compared to watchdogs that do not guard: "Israel's sentinels are blind, they are all without knowledge; they are all silent dogs that cannot bark; dreaming, lying down, loving to slumber" (Isa 56:10). Moreover, they devour that which they are there to protect, as sheep dogs that devour the sheep: "The dogs have a mighty appetite; they never have enough. The shepherds also have no understanding; they have all turned to their own way" (Isa 56:10–11; see also Job 30:1). The image of pariah dogs encircling a corpse is used for enemies coming to divide up the possessions of a dying man (Ps 22:17). Pariahs are by far the most frequently mentioned class of canine (e.g., Exod 22:31; 1 Kgs 14:11). There is no biblical reference, metaphorical or otherwise, to dogs used in hunting.

EXOTIC ANIMALS

Expeditions sent out to bring back exotic animals are mentioned only twice in the Hebrew Bible, in both cases describing joint expeditions of the Israelites and Phoenicians: "For the king [Solomon] had a fleet of ships of Tarshish at sea with the fleet of Hiram. Once every three years the fleet of ships of Tarshish used to come bringing gold,

silver, ivory, apes, and peacocks [*tukkiyyîm*[2]]" (1 Kgs 10:22; cf. 2 Chr 9:21). Another exotic animal is perhaps behind the term *taḥaš*, attested on a number of occasions in the Bible, usually in reference to its hide: "I gave you robes of brocade and sandals of *taḥaš*-hide; I fastened a linen girdle round you and dressed you in fine linen" (Ezek 16:10; translation is from Borowski 1998: 206). Many translations have been proposed, although "crocodile" seems to be the best possibility (Borowski 1998: 206).

MAN THE HUNTER

Numerous images of royal hunts testify to the practice among the Canaanites. A gold plate from Ugarit depicts a hunt scene where dogs accompany a chariot in pursuit of wild bulls and gazelles (fig. 6.4) and reliefs from Beth Shean show (hunting?) dogs and lions in conflict (see chapter 6, p. 213). The Ugaritic story of Kirta refers to hunting dogs among the animal possessions of the enemy king (Pabil of Udmu), who cannot sleep in his besieged city "for the sound of the roaring of his bulls, for the noise of the braying of his donkeys, for the lowing of his plow-oxen, the howling of his hunting dogs" (Pardee 1997d: 335; cf. Greenstein 1997: 20–21 who translates "watch-dog").

Israelite kings, unlike their counterparts in Mesopotamia, Egypt, and Anatolia, did not brag of their hunting skills, although references to hunting, verified by zooarchaeological finds, reveal that this activity was carried out at least through the age of the prophets (Isa 8:14; 24:18; Jer 48:44; Hos 5:1). Defensive hunting may have occurred, and there are biblical references to shepherds forced to hunt down lions and bears threatening their flocks (1 Sam 17:34–36; 2 Sam 23:20). Several biblical personalities (e.g., Esau, Gen 27:3–4) are connected with hunting, but the prototypical hunter was Nimrod: "He was a mighty hunter before the Lord; therefore it is said, 'Like Nimrod a mighty hunter before the Lord'" (Gen 10:9). Hunting involved primarily the use of traps and nets, although bow and arrows were also used (Gen 21:20; 27:3; Isa 7:24), the latter apparently the tool of choice for the elite. Nets and traps were well-suited to fishing and fowling, which, unlike big-game hunting, were still

[2] For a discussion of *tukiyyîm* see Borowski (1998: 205–6).

practiced in Palestine in historical periods (Firmage 1992: 1113; Borowski 1998: 155–58, 168–70).

DIVINATION, OMENOLOGY AND INCANTATIONS

Divination in the Hebrew Bible did not rely on observing animal behavior or other phenomena, although the Israelites clearly took an active interest in the behavior of animals. Consider, for example, Jeremiah's declaration: "Even the stork in the heavens knows its times; and the turtle dove, swallow, and crane observe the time of their coming" (8:7). Divination at Ugarit, on the other hand, did involve the observation of animals. Priests recorded the malformed births of sheep and goats (Pardee 1997f: 287–89) and practiced extispicy (Pardee 1997h: 291–93). One apparent catalog of dream omens includes a variety of domestic creatures (Pardee 1997g: 293–94), though the significance of these omens is difficult to reconstruct. Perhaps of similar purpose is the dream omen recounted in the biblical Joseph story, where seven fat and seven thin cows appearing in Pharaoh's dreams predicted alternate series of years of plenty and famine (Gen 41:1–32). Cattle would have been the obvious choice to convey this symbolic message since they embody better than any other animal the concepts of prosperity and wealth.

PROVERBS, PARABLES, AND RIDDLES

Proverbs

Biblical wisdom literature overflows with proverbs, many of which employ animals as their subjects. Job employs a proverb in question form to convey his right to complain: "Does the wild ass bray over its grass, or the ox low over its fodder?" (6:5). Complaining is as natural to him as the braying of the ass and the lowing of the ox. In the Book of Proverbs, animal behavior is the source of numerous proverbs designed to illustrate wisdom and its opposite: "Like a dog that returns to its vomit is a fool who reverts to his folly" (26:11). While one proverb hints at the futility of snaring wary prey ("for in vain is the net baited while the bird is looking on" [1:17; cf. 6:5]), another instructs the sluggard to learn wisdom by observing the ant: "Without having any chief or officer or ruler, it prepares its food in

summer and gathers its sustenance in harvest" (6:6–8). Prov 30:24–28 hints at the multivalence of human attitudes towards animals. In it, animals elsewhere despised are esteemed for instinctual behavior that is worthy of emulation:

> Four things on earth are small,
> yet they are exceedingly wise:
> the ants are a people without strength,
> yet they provide their food in the summer;
> the badgers are a people without power,
> yet they make their homes in the rocks;
> the locusts have no king,
> yet all of them march in rank;
> the lizard can be grasped in the hand,
> yet it is found in kings' palaces.

Such proverbs offer access to human attitudes toward certain animals. They depict the deer and gazelle as symbols of beauty ("rejoice in the wife of your youth, a lovely deer, a graceful doe" [Prov 5:18–19; cf. Song 3:5, 4:5; 2 Sam 2:18]),[3] but are not fond of the pig: "Like a gold ring in a pig's snout is a beautiful woman without good sense" (Prov 11:22).

To be sure, not all animals deserve admiration. Some are hapless, and these provide analogies for humans in moral (if not mortal) danger. The sages likened the man seduced by an adulteress to a series of beasts headed to their deaths: "Right away he follows her, and goes like an ox to the slaughter, or bounds like a stag toward the trap until an arrow pierces its entrails. He is like a bird rushing into a snare, not knowing that it will cost him his life" (Prov 7:22–23).

Israel's sages thus utilized animal behavior to teach proper human conduct. They likened the effects of wine drinking to the sudden strike of a snake: "Do not look at wine when it is red, when it sparkles in the cup and goes down smoothly. At the last it bites like a serpent and stings like an adder" (Prov 23:31–32). Snake bites were also the subject of proverbs: "If the snake bites before it is charmed, there is no advantage in a charmer" (Eccl 10:11; cf. 10:8) is comparable to the modern axiom about shutting the barn door after the horses have bolted.

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[3] The Arabic *ghazallah* (gazelle) is still used as a nickname for a beautiful woman.

Parables

The lion was the source of a parable in the form of a lament in Ezek 19:1–9. Here the lion is a metaphor, perhaps for Judah, and the cubs are kings of the Davidic line:

> What a lioness was your mother among lions! She lay down among young lions, rearing her cubs. She raised up one of her cubs; he became a young lion, and he learned to catch prey; he devoured humans. The nations sounded an alarm against him; he was caught in their pit; and they brought him with hooks to the land of Egypt. When she saw that she was thwarted, that her hope was lost, she took another of her cubs and made him a young lion. He prowled among the lions; he became a young lion, and he learned to catch prey; he devoured people. And he ravaged their strongholds, and laid waste their towns; the land was appalled, and all in it, at the sound of his roaring. The nations set upon him from the provinces all around; they spread their net over him; he was caught in their pit. With hooks they put him in a cage, and brought him to the king of Babylon; they brought him into custody, so that his voice should be heard no more on the mountains of Israel.

The prophet Nathan directs a parable at David for his responsibility in the death of Uriah and subsequent marriage to his wife Bathsheba. He relates a story about a rich man who took away the "one little ewe lamb" owned by a poor man so that he could prepare a meal and serve a guest. The story caused David to explode with indignation only to be told by Nathan, "You are the man!" (2 Sam 12:1–7). The lamb, here a metaphor for the dead Uriah, served generally as a symbol of powerlessness, no doubt due to its favored status as sacrificial victim. Compare this warning in the Myth of Baal: "Don't get near Môtu, son of 'Ilu, Lest he take you as (he would) a lamb in his mouth, lest you be destroyed as (would be) a kid in his crushing jaws" (Pardee 1997b: 254 and 264).

Riddles

Compared to other literary genres, riddles are not plentiful in Syro-Palestinian literature. In fact, they are absent from surviving Ugaritic literature and their biblical uses are limited to a few examples. One riddle involving an animal occurs in the story of Samson. Referring to the lion he killed in whose hide bees made a hive and produced honey, Samson presented a riddle to the Philistines: "Out of the eater came something to eat, out of the strong came something sweet" (Judg

14:14). With the help of his wife the Philistines solved the riddle, responding, "What is sweeter than honey? What is stronger than a lion?," prompting Samson's metaphorical retort: "If you had not ploughed with my heifer, you would not have found out my riddle" (Judg 14:18). This episode is interesting for its unnatural placement of the beehive, as a literary contrivance, in the carcass of an unclean animal. Although honey is highly valued in the Hebrew Bible (Gen 43:11), it is not clear whether it is bee's honey or a confection made from dates (Borowski 1998: 162) that is referred too. Beekeeping was not practiced in ancient Israel and the bee itself was denegrated. According to Margulies (1974), this attitude was a reaction by the biblical authors to the animal's importance among the Philistines (see also Deist 2000: 133).

LITERATURE AND MYTHOLOGY

Figurative language in Syro-Palestinian literature had a rich storehouse of animal images and symbols to draw on. Almost any animal possessed the potential to convey symbolic meaning, but some, such as the bull, lion, eagle, and dog, were especially prone to this kind of exploitation. The Song of Solomon (4:1–2) uses some inventive imagery with domestic animals to extol a woman's beauty:

> Your eyes are doves behind your veil.
> Your hair is like a flock of goats,
> moving down the slopes of Gilead.
> Your teeth are like a flock of shorn ewes
> that have come up from the washing,
> all of which bear twins,
> and not one among them is bereaved.

Domestic animals were particularly effective in illustrating loyalty and devotion. In Isa 1:3, the Israelites compare unfavorably in their devotion to Yahweh:

> An ox knows its owner
> and a donkey its master's stall;
> but Israel lacks all knowledge,
> my people has no discernment.

Sheep provided a metaphor for the people of Israel and their leaders, especially Yahweh, were their shepherd (Ps 23; 74:1; 79:13; 100:3; Jer 23:2; Ezek 34:31; Mic 7:14). In prophecying the destruc-

tion of Babylon, Jeremiah describes Israel as "a hunted sheep driven away by lions" (50:17). The people of Israel are also represented metaphorically by a heifer (Hos 10:11).

On the other end of the faunal spectrum, jackals, foxes, hyenas and birds of prey (e.g., hawks and owls), all generally considered to have negative connotations, appear as symbols of desolation in the Hebrew Bible. Several of the Hebrew prophets use these animals in predicting the gloomy future: "Your prophets, Israel, have been like foxes among ruins" (Ezek 13:4); "Hazor shall become a lair of jackals, an everlasting waste; no one shall live there, nor shall anyone settle in it" (Jer 49:33); and finally, "the hawk and the hedgehog shall possess it; the owl and the raven shall live in it" (Isa 34:11). Compare the future state of Babylon according to Jeremiah's prediction (50:39): "Wild animals shall live with hyenas in Babylon, and ostriches shall inhabit her; she shall never again be peopled, or inhabited for all generations." Like most birds, the ostrich is given a bad press in the Hebrew Bible, but its presence here as a symbol of desolation may be explained by another prophetic passage: "I will make lamentation like the jackals, and mourning like the ostriches" (Mic 1:8).

The Day of Yahweh is also described in animal imagery, with dangerous animals at their eschatological worst, as foreseen by the prophet Amos:

> Why do you want the day of the Lord?
> It is darkness, not light;
> as if someone fled from a lion,
> and was met by a bear;
> or went into the house and rested a hand against the wall,
> and was bitten by a snake.
> (Amos 5:18–19)

But the end of days can be experienced quite differently. At that time justice will reign, the natural order will be erased, and dangerous animals will cease to threaten:

> The wolf shall live with the lamb,
> the leopard shall lie down with the kid,
> the calf and the lion and the fatling together,
> and a little child shall lead them.
> The cow and the bear shall graze,
> their young shall lie down together;
> and the lion shall eat straw like the ox.
> The nursing child shall play over the hole of the asp,

and the weaned child shall put its hand on the adder's den.
(Isa 11:6–8; see also 65:25).

Such scenes are reminiscent of the Anatolian and Mesopotamian paradisiacal scenes of natural enemies coexisting in a peaceful paradise.

Animal imagery can be used as a literary device to enhance the drama of a scene. The combat between Baal and Mot in the Canaanite myth of Baal is likened to that of fearsome animals:

Motu is strong, Baʿlu is strong;
They butt each other like wild bulls,
Motu is strong, Baʿlu is strong;
They bite each other like snakes
Motu is strong, Baʿlu is strong;
They trample each other like running (animals)
(Pardee 1997b: 272; see also Smith 1997: 262)

Mot's behavior here is consistent with his image as portrayed elsewhere. He describes his own voracious appetite:

"Is my appetite the appetite of the lion in the wild,
Or the desire of the dolphin in the sea?
Or does it go to a pool like a buffalo,
Or travel to a spring like a hind,
Or, truly, does my appetite consume like an ass?"
(Smith 1997: 140 and 142; see also Pardee 1997b: 264 and 265; cf. de Moor 1987: 70).

Bull, Cow and Calf

In Ugaritic literature, the bull is the most frequently encountered animal, appearing most often as a divine epithet for the gods El and Baal (see also below). The might of the Assyrian king too was compared with that of the bull (Isa 10:13). Bull calves were images of youthful vigor. Mal 4:2: "You [the righteous] shall go out leaping like calves from the stall." The storm brought by Yahweh to the mountains causes Lebanon to "skip like a calf," Mt. Hermon "like a young wild ox" (Ps 29:6).

The bull's horn was also a symbol of power and strength and of fertility (A.H.W. Curtis 1990: 28–29), deriving its symbolic power in both Ugaritic and biblical literature, *pars pro toto*, from the animal itself. As a symbol of the might of the Israelites, Zedekiah "made for himself horns of iron, and he said, 'Thus says the Lord: With

these you shall gore the Arameans until they are destroyed'" (1 Kgs 22:11; cf. Deut 33:17). A song of thanksgiving for overcoming the enemy entones: "you have exalted my horn like that of the wild ox" (Ps 92:10).

Cows denote nurturing love: "Like the heart of a cow for her calf, like the heart of a ewe for her lamb, so is the heart of Anatu after Ba'lu" (Pardee 1997b: 270). This passage calls to mind iconographic renderings in ivory from Samaria and Syria of the suckling cow whose head is turned back toward her nursing calf, the two together completing a circle (Keel 1998: 125–26, 241). The motif was popular; it appears, for example, as a drawing on Pithos A from Kuntillet 'Ajrud (Keel and Uehlinger 1998: fig. 220). Scholars have traditionally associated the heifer in these images with Anat because of mythological passages describing Baal's sexual exploits with a cow (Smith 1997: 148; Pardee 1997b: 267; *CAT* 1:10, 1:11 [Parker 1997: texts 15, 16], and 1:13), but this identification has been contested vigorously (see, e.g., Walls 1992: 122–44; see also Smith 1990: 51; 1997: 173 n. 170; A.H.W. Curtis 1990: 19). The motif of the deity who copulates with a heifer is attested elsewhere in the ancient Near East (see Veldhuis 1991 for Akkadian; Hoffner 1998: 85–87 for Hurro-Hittite).

Eagle

Although birds are prone to capture (Hos 7:12; Ps 124:7; Prov 6:5; 7:23) and "flightiness" (Isa 16:2; Prov 26:2) and were therefore not well-respected generally in biblical sources, the eagle on the other hand impressed the Israelites. Images of the eagle allude to its speed in flight (Jer 4:13), its expansive wings (Jer 49:22; Ezek 17:3), and the heights in which it dwells (Job 39:27; Jer 49:16). Retribution and destruction may come "as an eagle" (Jer 49:22; Hos 8:1), but God can also rescue with the attributes of the eagle: "You have seen what I did to the Egyptians, and how I bore you on eagles' wings and brought you to myself" (Exod 19:4; cf. Deut 32:11; for the eagle as divine messenger in Hittite mythology, see chapter 11). Indeed, Yahweh "will deliver you from the snare of the fowler and from the deadly pestilence; he will cover you with his pinions, and under his wings you will find refuge" (Ps 91:3–4). An allegorical passage in Ezekiel refers to both King Nebuchadnezzar of Babylon (Ezek 17:2–6) and the Egyptian Pharaoh Psammetichus II (Ezek 17:7) as great

eagles with colorful plumage. Finally, Saul and Jonathan were described in David's Lament as "swifter than eagles, ... stronger than lions" (2 Sam 1:23).

Birds of prey in Ugaritic epic are used metaphorically when describing the powerful weapons made by Kothar for Baal in his struggle against Yamm ("sea"). The weapons are instructed by Kothar: "May you leap from Baal's hand, Like a raptor from his fingers. Strike the torso of Prince Yamm, Between the arms of Judge River" (Smith 1997: 103; see also Pardee 1997b: 249).

Lion

Like the eagle, the lion provided a strong image for retribution and destruction: "For a nation has invaded my land, powerful and innumerable; its teeth are lions' teeth, and it has the fangs of a lioness" (Joel 1:6). Yahweh too can be a vengeful lion: "For I will be like a lion to Ephraim, and like a young lion to the house of Judah. ... I will carry off, and no one shall rescue" (Hos 5:14). The lion's roar is compared to the speech of Yahweh: "The lion has roared; who will not fear? The Lord God has spoken; who can but prophesy?" (Amos 3:8). The lion is a fitting point of comparison for Yahweh because he is the king of beasts:

> Three things are stately in their stride;
> four are stately in their gait:
> the lion, which is mightiest among wild animals
> and does not turn back before any;
> the strutting rooster, the he-goat,
> and a king striding before his people.
> (Prov 30:29–31)

Although the lion was kingly, Israelite kings were never said to be lion-like, although Solomon's throne was described as flanked by two lions and the six steps leading to it by twelve more (1 Kgs 10:19–20). Even the enemy country (see below) or a bad ruler could be compared to a lion, as in Prov 28:15: "Like a roaring lion or a charging bear is a wicked ruler over a poor people."

Dog

The dog, with its multiple levels of interaction with humans, enjoyed multiple symbolic levels as well, and thus was a favorite in figura-

tive language. Yarihu, the Ugaritic moon god, behaves like a dog in the text known as "El's Divine Feast":

> Yarihu prepares his cup,
> (then) like a dog he drags it
> under the tables ...

and when he is subsequently fed choice cuts from the table by Attarat and Anat, the goddesses are taken to task for wasting the meat on a dog:

> The doorman of 'Ilu's house yells at them
> so they don't give a *nsb*-cut to a dog,
> (so) they (don't) give a shoulder-cut to a hound
> (Pardee 1997c: 303–4; Lewis 1997: 194–95)

The reason for Yarihu's behavior is not explained by the text, although Pardee suggests a connection between the moon (Yarihu) and goddesses associated with the hunt (Attarat and Anat), for whom the hunting dog would have had special significance (1997c: 303 n. 6).

Kirta's son addresses the ailing king: "Like a dog we grow old in your house, like a hound in your court" (Pardee 1997d: 339). Compare Greenstein's translation: "Like a dog you pass into your tomb; Like a cur, even into your grave." (1997: 31). It is difficult to know whether the dog is intended in this passage as a positive or a negative image, as reflected in the widely divergent translations. In Pardee's translation, the image is of a dog as a loved pet, while in Greenstein's, the king is no better than a dog in the fate he is dealt.

Similes employing the dog are also at home in the biblical literature. Humility was expressed formulaically by referring to oneself as a (dead) dog (1 Sam 24:14; 2 Sam 9:8; 2 Kgs 8:13). Hebrew letters often followed the greeting with a formula of self-abasement: "I am nothing but a dog" (Lindenberger 1994: 8). The Amarna correspondence from Rib-Adda, ruler of Byblos, to the Pharoah, which repeatedly refers to the Amurru ruler, Abdi-Aširta as a dog, is not intended as an invective so much as a statement of his political status relative to his overlord. Abdi-Aširta is a vassal, and therefore inferior/subservient to the Egyptian king (Galán 1993). A similar phenomenon can be observed in Ugaritic myth. In the myth of Baal, the goddess Fire is called the "Dog of El," an epithet that, like "the Calf of El" used for the deity Rebel in the preceding line of the text, indicates her subservience to El (Smith 1997: 111 and 168 n. 71).

Dogs were more often depicted as pariahs than as pets. The former provided particularly colorful images. Psalm 59, a prayer for deliverance from enemies, compares their exuberance at the psalmist's predicament to that of dogs: "Each evening they [the enemy] come back, howling like dogs and prowling about the city. They roam about for food, and growl if they do not get their fill" (59:14–15). One Jewish leader at Elephantine in a letter cursed the Persian military governor for destroying the temple of Yahweh: "May the dogs tear his guts out from between his legs!" (Lindenberger 1994: 67). Nevertheless, when hope is gone, it is well to remember that "a living dog is better than a dead lion" (Eccl 9:4). When, out of ten thousand men, Gideon had to choose those who would accompany him to fight against Midian, he conducted a test, following Yahweh's instruction, to select only "all those who lap the water with their tongues, as a dog laps" (Judg 7:5). The significance of this criterion for selection is ambiguous for the understanding of human attitudes toward dogs: Are the chosen more fearsome warriors for lapping the water like dogs or are they simply short on brains, or both?

Insects

Insects provided effective images, as when Job's companion says of the godless man, "His trust is a spider's web" (Job 8:14). The troops of the enemy powers are described as insect pests (Assyria is the bee and Egypt the fly[4]) who will come and settle on the land (Isa 7:18–19); the image here is simultaneously demeaning and frightening. Locusts and grasshoppers are particularly apparent in the literature because of their ability to bring disaster and devastation to crops (Joel 1:4; 1 Kgs 8:37; Amos 4:9). Because of their ability to wreak havoc in great swarms, they serve in the Hebrew Bible as an image for hordes of attacking armies: "For they (the Midianites) and their livestock would come up; and they would even bring their tents, as thick as locusts; neither they nor their camels could be counted" (Judg 6:5; see also Isa 33:4; Jer 46:23; 51:27; Nah 3:15–17; Joel 1:4).

Similarly, the description of Anat's destructive frenzy in the Ugaritic myth of Baal utilitizes this image to great effect: "Under her are heads like balls, above her are hands like locusts, heaps of fighters'

[4] Ironically it was Egypt that was well-known for beekeeping and honey production (Borowski 1998: 161–63). It is also likely that Egypt was referred to metaphorically in the Bible as "the wasp" (Borowski 1983: 315–19).

hands are like (heaps of) grasshoppers (Pardee 1997b: 250; see also Smith 1997: 107). Insect swarms are also used in the Kirta Epic to describe the army of King Kirta on campaign: "Like grasshoppers you will invade the field, like locusts the edges of the steppe-land" (Pardee 1997d: 334; Greenstein 1997: 15).

Epithets and Titles

The bull (and its horns) symbolize not only the power and strength of El, who bears the epithet "Bull El" throughout Ugaritic literature, but also the might of other gods and even of human leaders, warriors and nobles (Miller 1970: 180–81; A.H.W. Curtis 1990: 17–31, esp. 18 n. 9, 27). In the Hebrew Bible, the ram too is a designation for leaders, princes and nobles (e.g. Exod 15:15; 2 Kgs 24:15; Ezek 31:11; Miller 1970: 181), while "young lions" refers to warriors, among other things (Nah 2:14b; Miller 1970: 183). "Boar" is used in the Ugaritic sources either as a military or administrative title for someone of high rank (Miller 1970: 178–79).

The Kirta Epic seems to use the bull and gazelle as epithets or metaphors to designate nobility (Pardee 1997d: 338 and n. 56; Miller 1970: 178; Greenstein 1997: 27 and nn. 81, 82). Both animals also appear in the Hebrew Bible, the former as a title for Yahweh (Isa 1:24; 49:26) and the latter as the symbol of physical beauty (Song 4:5).

Personified Animals

Animals are personified in Syro-Palestinian literature to the extent that they are occasionally made to speak, but examples are few.[5] Best-known is the serpent in the Garden of Eden, who conducts a conversation with the woman concerning eating the fruit from the Tree of Knowledge (Gen 3:1–4). Another example involves the seer Balaam, son of Beor, who, when summoned by the king of Moab, set out on his donkey. On the journey, an angel of Yahweh appeared on the road ahead causing the hapless animal to turn off into a field. Balaam, who could not see the angel, became angry and hit the donkey. The angel appeared to the donkey a total of three times,

[5] The Jotham Parable (Judg 9:8–20) is one instance in which trees are portrayed as talking.

with a similar result each time. "Then the Lord opened the mouth of the donkey," whereupon the animal complained vehemently of its mistreatment (Num 22:21–30). The animal's ability to speak is a direct result of divine intervention.

FANTASTIC ANIMALS

Imaginary creatures dwell within the mythological literature of Syria-Palestine. Of the ancient divine enemies shared by Baal and Yahweh—Leviathan, Tannin (Dragon), Yamm (Sea), and Mot (Death)—at least two appear to have had animal characteristics. References to Leviathan occur in the Hebrew Bible's various genres of poetry: "On that day the Lord with his cruel and great and strong sword will punish Leviathan the fleeing serpent, Leviathan the twisting serpent, and he will kill the dragon [*tannin*] that is in the sea" (Isa 27:1; see also Ps 74:13–14; 104:26; Job 40:25). The same cosmic enemies (Litan is Leviathan and Tannin the seven-headed creature) were defeated by Baal, here addressed by his enemy Mot:

> "When you killed Litan, the Fleeing Serpent,
> Annihilated the Twisty Serpent,
> The Potentate with Seven Heads,
> The heavens grew hot, they withered."
> (Smith 1997: 141; see also Pardee 1997b: 265)

Rahab, also conceived of as the seven-headed enemy of Yahweh, is attested in Isa 51:9 (with Tannin and Yamm) and elsewhere (Ps 89:11; Job 9:13; 26:12).[6] These monstrous creatures threaten ordered creation and, as Isa 27:1 attests, their threat is everpresent, their ultimate and complete subjugation only a distant prophecy.

An interesting cluster of mythological creatures heralds the epiphany of the Lord in Ezekiel's vision when he receives his commission to prophecy[7]:

> ... and in the middle of the fire, something like gleaming amber. In the middle of it was something like four living creatures. This was their

[6] For these enemies of Baal and Yahweh, see Cross (1973: 112–44) and Smith (1995: 2036, 2038). See also de Moor's translations of a series of incantations against these and other animalistic creatures (1987: 175–90).

[7] When Isaiah received his call, he also encountered in the Temple "supercreatures," Seraphim, in attendance on the Lord. "Each had six wings" according to Isa 6:2 (see also Ezekiel 10).

> appearance: they were of human form. Each had four faces, and each of them had four wings. Their legs were straight, and the soles of their feet were like the sole of a calf's foot: and they sparkled like burnished bronze. Under their wings on their four sides they had human hands. And the four had their faces and their wings thus: their wings touched one another; each of them moved straight ahead, without turning as they moved. As for the appearance of their faces: the four had the face of a human being, the face of a lion on the right side, the face of an ox on the left side, and the face of an eagle; such were their faces. Their wings were spread out above; each creature had two wings, each of which touched the wing of another, while two covered their bodies. (Ezek 1:4–11; cf. 10:14)

The supernatural creatures described here by Ezekiel are cherubim, composite beings that are also—although in modified form—associated with the Ark of the Covenant in the Solomonic Temple. The biblical cherubim are comparable to contemporary representations of mixed beings prevalent in the art of the Near East in general in this period. Also of note are the "satyrs" (*sa'ir*), or "goat-demons" mentioned a handful of times in the Hebrew Bible (Lev 17:7; 2 Chr 11:15; Isa 13:21; 34:14). Unlike the cherubim, which are always associated with Yahweh, these creatures are connected by the biblical writers with the cult outside of Israel, and are thus reviled.

CONCLUSION

This brief survey demonstrates the richness of the natural world in ancient Syria-Palestine and the close relationship that the human inhabitants of the region shared with their animal counterparts. Their powers of observation found expression in their literature in a variety of ways. However, the limitations of the surviving written documents hinder a fuller understanding and the references to animals in the available materials can offer only a hint at what must have been a much deeper relationship with the animal world. Whether or not the texts reflect accurately human interaction with and reaction to animals in antiquity, we can be certain that the writers, prophets and sages expected their audience to understand their message through these images, many of which are still familiar today.

PART IV

ANIMALS IN RELIGION

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CHAPTER ELEVEN

ANIMALS IN THE RELIGIONS OF ANCIENT ANATOLIA

BILLIE JEAN COLLINS

PREHISTORY

Any commentary on animals in the religions of prehistoric Anatolia is perforce grounded wholly in the art and what can be gleaned from the faunal assemblages. We are fortunate in the abundance, quality, and variety of the art that has been uncovered, but often less fortunate in having a proper context for that art and even moreso for the lack of detailed reports on the animal bone remains from many excavated prehistoric sites. The following is a brief sketch of the nature of the evidence relating to animals and its possible religious interpretations.

Neolithic Çatal Höyük

That animals were a main focus of the ideology of the Neolithic peoples of Anatolia is indisputable, but we are handicapped in our ability to discern the underlying principles of that ideology. The remarkable finds of the early 1960s from the site of Çatal Höyük in the Konya Plain and their early interpretation by the excavator have shaped all subsequent approaches to the nature of divinity in Anatolia (Mellaart 1967). The site is replete with artistic representations of animals and humans. Rooms decorated with images of bulls or horn cores and, less often, rams' heads suggest the importance of these animals as symbols, perhaps of power, status, strength, or virility, as is the case in historical periods. Felines depicted in wall paintings and in small sculptures seem to have symbolic significance as well. Two felines flank a seated steatopagus female figurine in the process of giving birth (fig. 2.1). It is the only example of its type at the site, but has drawn comparison with historically attested goddesses found with lions, including Kubaba and Cybele. Deer are

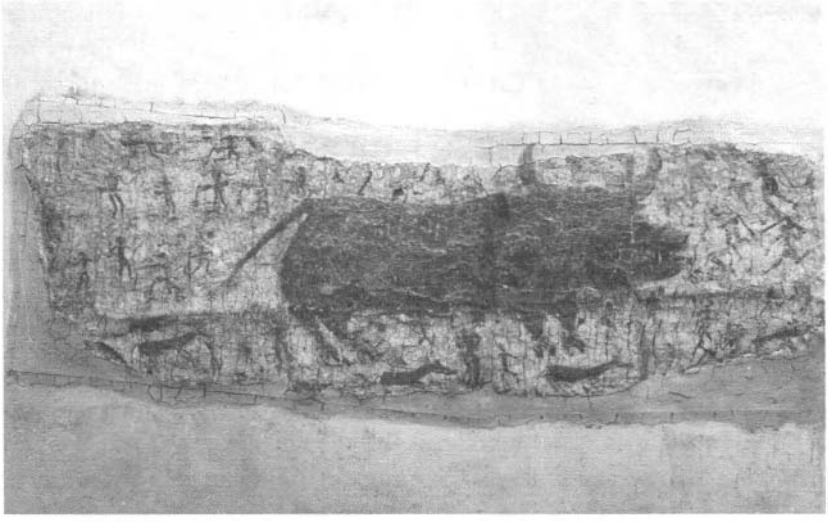

Fig. 11.1. Wall painting showing ritual hunt. From "shrine" A.III.1, Çatal Höyük. Neolithic period. Courtesy Museum of Anatolian Civilizations, Ankara.

depicted in scenes of the hunt (fig. 11.1) and red colored items of clothing may indicate deer skin. Vultures are shown in the wall-paintings diving for the flesh of headless corpses, apparently playing an integral role in the inhabitants' practice of excarnation. Despite our limitations, the search for the possible meanings of these representations continues. New excavations at the site have sought to reassess the identification, context, and variety of the human and animal figurines, with a view to opening the discussion to new interpretations of the finds. These include the possibility that the ample female figurines may be concerned not with fertility and childbearing but with a recognition of women's roles in other aspects of society, and the possibility that there existed at the site a totemic clan structure that used certain animal symbols (leopard, vulture, deer and boar, for example) to identify clan groups (Hamilton 1996: 226–27).

Early Bronze Age Alaca Höyük

The site of Alaca Höyük, a major religious center in the Hittite Period, was also an important power center in the Early Bronze Age

(ca. 2500 B.C.). The "royal" tombs excavated from this north central Anatolian site have engendered much speculation about the origins and religious beliefs of the third millennium inhabitants of the city. Figures of deer and bulls, sometimes in combination with other animals within a spherical design, adorned the graves of local notables (fig. 2.2). A cultic interpretation of these standards is generally accepted by scholars, and the temptation to connect them in some way with the religious beliefs of later periods has proven irresistible. Mayer-Opificius (1993) has argued that the standards are representations of gods who in the Hittite period are associated with these animals: the bull is the Storm God, the deer is the Protective Deity, and the disk symbols represent the Sun God. Orthmann (1967) has argued, using comparanda from kurgan burials in the Caucasus, that the standards were originally attached to wagons. The fact that there was only one animal-shaped standard per grave (Orthmann 1967: 52), while the disk-shaped standards numbered up to six in a single grave, suggests a cultic significance for the former. Over the wooden covers of the tombs were placed the skulls and hooves of the ritually slaughtered cattle who had pulled the wagons.

The deer standards from Alaca in particular have contributed to a perception of a deer cult of long duration in Anatolia (Crepon 1981). But a special reverence for this animal is only in keeping with its status in regions where it was native, and in particular within those Indo-European groups whose territory it overlapped. Red deer were plentiful and formed the main staple in the Indo-European diet. It's economic importance made it the quintessential wild animal among these groups. It is unlikely that the reverence for the deer in Anatolia is attributable purely to the arrival of the Indo-Europeans (with Crepon 1981: 148). However, it may be the case that upon arriving, the Indo-Europeans found a preexisting ideology surrounding the animal that would have been compatable at some level with their own. Although relatively infrequent in Hittite ritual, when the deer does play a role it is an uncommonly central one. The stag figures carried in procession in the Hittite KI.LAM Festival bring to mind the standards from the Alaca tombs. Their prominence in the Festival suggested to Singer in his edition that a festival known elsewhere in Hittite texts as EZEN *AYALI* "festival of the stag," might be another name for the KI.LAM (1983: 137–38).

Fig. 11.2. Animal-shaped rhyton in the form of a lion. Kültepe. Old Assyrian Colony period (19th century). Painted terracotta. H. 20.5 cm. Courtesy Musée du Louvre.

Old Assyrian Colony Period (MBA)

Much of the religious iconography of the Middle Bronze Age, seen in particular in the art of the Old Assyrian Colony period, bears on later Hittite artistic and religious traditions (White 1993). We see already in this period the immense popularity of animal-shaped rhyta in the cult (fig. 11.2, and e.g., Bittel 1976: pls. 62–69, 71, 72). Rhyta and protomes shaped like animals—boars, goats, deer, lions, eagles, even spiders—were a standard part of the cultic equipment in every Hittite temple. Although undoubtedly these objects conveyed the symbolism attached to the animal to the rites in which they were employed, it has not proved possible to reconstruct the pattern for their use within the cult, if indeed one ever existed.[1] Animals in the glyptic and coroplastic art of this period are also plentiful (Dupré

[1] For a discussion of animal-shaped vessels in the Empire period, see Otten (1989).

Fig. 11.3. Sealing showing a goddess seated on a goat over two lions (upper right). She holds one of three birds in her hand. Tablet with cylinder seal impression from Kültepe. Middle Bronze Age. After N. Özgüç (1965: 84 pl. XXIV: 71).

1993). Glyptic reveals animal-god associations that will survive into the Hittite period and beyond (fig. 11.3; van Loon 1985: pls. V–IX).

THE HITTITE PERIOD

Animals formed the core of the religious life of the Hittites of the Late Bronze Age, who provide the bulk of the corpus of texts native to Anatolia throughout its ancient history. Animals served as companions to the gods, forming part of the deity's iconography and often defining his power. Divining the outcome of future events or the significance of current ones depended on the observation of

animal behavior and the reading of messages left by the gods on the entrails of sacrificed animals. But communication with the divine found its most powerful expression in blood sacrifices. Magic rituals often utilized living animals, parts of animals, and images of animals to affect a desired result. Somewhat less direct, but equally effective, the symbolic power of animals was applied liberally in incantations of sympathetic magic. Funerary rituals included the immolation of a variety of domestic species. Finally, the sacred nature of the hunt found expression in ritual play and reenactment.

Sacred Animals and Divine Representation

The deities of Anatolia are frequently accompanied in the art and the literature by a variety of animals. In some cases, a class of deity (e.g., storm god, war god) will have a close association with a particular animal, an arrangement in which the animal forms an integral part of the religious iconography of the deity. For the Hittites, animal-god associations seem to have had two primary significances (Taracha 1987: 264). In some cases the animal was part of the "numen" or essence of the deity, while in others it served as an attribute of the earthly sphere of influence of the deity. In the former instances, the animal may be said to be sacred to the deity, since its role in defining the nature of the deity in question was indispensable. In most cases, these deity-animal associations are visible already in the glyptic of the Old Assyrian Colony period. In fact, sacred animals are exceptional and limited to a few cases. Laroche refers to a "fundamental triptych" of sacred animals, comprising the bull, deer and lion (Laroche 1981: 222). The bull, which is connected so closely with the Hittite Storm God that the deity is typically represented as one, is the clearest example in Hittite religious iconography (fig. 2.4). The deer, which supports the Protective Deity of the Field and defines his nature as a god of the hunt (fig. 11.4), has an equally long iconographic history in Anatolia. As a symbol of aggression, the lion was associated with many deities and on the glyptic of Old Assyrian Colony period was frequently associated with war gods (Laroche 1981: 222–23; Taracha 1987: 265). To other deities, it was a companion that defined their dangerous aspect. But it does not belong to the group of "sacred" animals because it is not fundamental to any deity.

Fig. 11.4. Relief of a god on a stag. From Yeniköy. Steatite. 14th–13th centuries B.C. H. 6.3 cm. Courtesy Museum of Anatolian Civilizations, Ankara.

The bee on the other hand does belong in this group. Although no representations of Hannahanna are described in the cult inventories and no example of her association with the bee can be pointed to in the iconography, her dependence on the bee's power to define her nature and carry out her will are clear from the mythological and ritual texts (Haas 1981: 111–16; Collins 1989: 231–44). The bee defines Hannahanna as a goddess of hearth and home and of abundance. In myth, it retrieves the missing *kurša*-fetish, also a symbol of abundance, at the goddess' bidding. And in a Hattic-Hittite recitation that forms a part of the liturgy of the KI.LAM Festival, the "Mother Bee" is brought into the home as a symbol of domesticity (Singer 1984: 99–101; Haas 1981: 112).[2]

[2] For the Greek evidence for divine associations with the bee see Haas (1981: 114–16), Collins (2001).

Other animals with close associations with the gods[3] include the wild(?) goat or sheep and bird of prey associated with the so-called nature goddess that is well-attested on seals (cf. fig. 11.3) and in the cult inventories:

> City of Lapana, divine image of Iyaya: One statuette (made) of wood, of a woman seated, veiled, of one [cubit], its head inlaid with gold. The body and the throne (are) inla[id] with lead. Two wooden wild sheep covered with lead, are seated under the goddess, to the right and left. One eagle inlaid with lead, two copper scepters, two cups of bronze. Utensils of the goddess are present. She has a new temple; she has a priest; the groom (is) old. (*KUB* 38.1 iv 1–7; Collins 1989: 177–78; Rost 1963: 181)

A sacred animal depicted by itself was a visual code for the deity. This is nowhere better illustrated than on the gate relief from Alaca Höyük, where the king and queen are depicted worshiping before a pedestal on which stands a bull, a representation of the Storm God, supreme god of the land (fig. 2.4).

Deities were not limited to representation in human form; they could be, and often were, represented by an animal or a cultic object, such as a stele (*huwaši-*), solar disk, dagger (fig. 11.5), *kurša-* or other fetish. As some have argued, the animal "standards" from third millennium Alaca Höyük may be examples of prehistoric gods in animal form (fig. 2.2; Mayer-Opificius 1993; Goetze 1957: 40), but there is no clear evidence of animals themselves being worshiped.

Royal Representation

Unlike their deities, the Hittites did not represent their kings in the company of animals. Nevertheless, animals were exploited to enhance the image both of the person of the king and of the royal family. The two animals most closely associated with the royal house were the lion and the eagle. The double headed eagle that adorns the gate at Alaca Höyük (fig. 11.6) and supports the two goddesses attending Hebat at Yazılıkaya may have been an emblem of the royal house. As a symbol it was certainly impressive or important enough to survive the Late Bronze Age and resurface as an emblem of the Byzantine Empire and its European successors. Two rituals testify to the close association of the eagle with the royal house. In the Ritual

[3] On the association of Pirinkir with horses, see Beckman (1999: 25–39, esp. 39).

Fig. 11.5. Relief of underworld deity in the form of a dagger. Chamber B, Yazılıkaya. Ca. 1225 B.C. H. ca. 3.40 m, W. ca. 1.10. After Bittel (1976: 220).

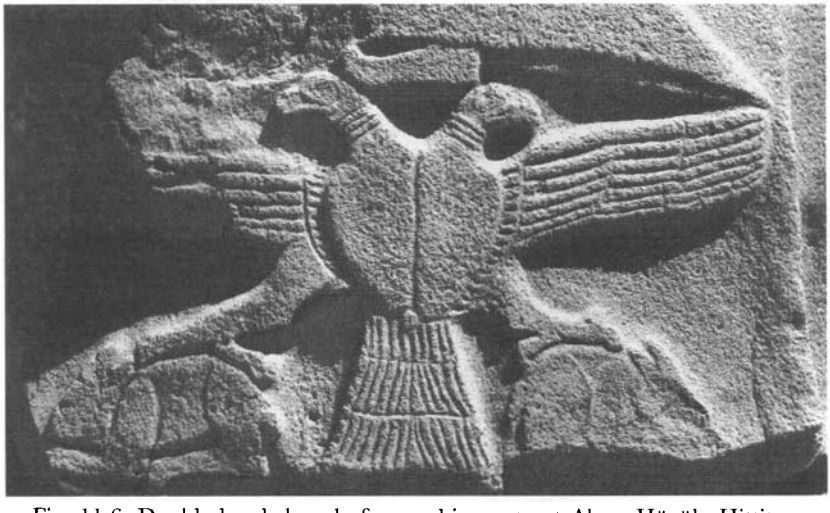

Fig. 11.6. Double-headed eagle from sphinx gate at Alaca Höyük. Hittite Empire period, ca. 1300 B.C. Courtesy Museum of Anatolian Civilizations, Ankara.

for the Foundation of a New Palace, the personified eagle receives instructions from the deified Throne (a symbolic abstraction of kingship) on behalf of the king:

> When the king comes into the house, then the throne calls the eagle (saying): "Go. I am sending you to the Sea. But when you go, then look into the field and forest, whoever remains there." § That one (the eagle) answers, "I have looked into (them) and Išduštaya (and) Papaya, the infernal ancient dieties, the in-laws(?) are sitting there, crouched." § He (the Throne) answers: "And what are they doing?" That one (the eagle) answers him: "(One) holds a distaff, (they) hold full spindles. § They are spinning the years of the king. Of the years a limit to their number is not to be seen." (Collins 1989: 114–15)

Later in the ritual both eagle and lion appear when the eagle is ordered to bring a pottery vessel and to intertwine the tails(?) of a lion and a leopard, an action symbolic of the union of the heart and soul of the king. In a ritual for the Royal Couple, a live eagle is waved over the king and queen as the following incantation is performed:

> "[A]s the Sun God, the Storm God, the Heaven and the Earth (are) eternal, let the king and queen and (their) children be eternal." § Then I release the eagle to the sky again, and after it I say these (words): "I have not releas[ed] it, the king and queen have released it. Go now.

> To the Sun God and the Storm God say, "As the Sun God (and) the Storm God (are) eternal, let the king and queen likewise be eternal." (Collins 1989: 126–29)

The eagle was, in a real sense, the king's personal messenger to the gods. Besides Šerri and Hurri, the bulls of the Hurrian deity Teššub, the eagle is the only animal that held divine status in its own right (Collins 1989: 109). This divine status, though, does not seem to have entitled the eagle to receive offerings as befitted a god. It appears instead to have enjoyed a unique place in the Hittites' sacrificial handbook, its ritual uses further attesting to its close association with the kingship (see below).

One Hittite king in particular exploited the image of the lion for political as well as literary embellishment (Collins 1998: 15–20). In his Testament, Hattušili I commands his court to accept Muršili as heir to his throne, asserting that, "[the g]od [will install only] a li[on] in the place of the lion" (Collins 1998: 16). The Benedictions for Labarna, probably also composed in the reign of Hattušili I, include an incantation glorifying the physical presence of the king: "His frame is new, his breast is new, his penis is new, his head is of tin, his teeth are those of a lion, his eyes are (those) [of] an eagle, and he sees like an eagle" (Collins 1998: 19). But, although Hattušili I fostered the lion-king metaphor, the lion as a symbol of the royal house was not unique to his reign. The lion statues that guarded the gates of the Hittite capital stood as a symbol of that house until the end of Hittite history, when the imagery was inherited by the Neo-Hittite kingdoms of the Iron Age.

Divination

Divination involving the solicitation of a message from the deity (oracular inquiry) took many forms (Beal in press). All but one known form of Hittite divination (symbol oracles) relied on animals to provide an oracular response. The best-attested of these was extispicy, or the examination of the innards of sheep and other sacrificial beasts, while the rare "bed" oracles involved the observation of the animal as it was led to slaughter. When they occurred, the bed oracles preceded the "flesh" oracles (extispicy) and anticipated their result. Augury, the observation of the flight patterns of birds, was an innovation of Anatolian divinatory practices. Employing arcane vocabulary, and more poorly attested than the other forms of oracular

inquiry, snake oracles involved the observation of the movements of a variety of the reptiles. Finally, *ḪURRI*-bird oracles, the least understood form of Hittite divination, may have been bird-extispicy (Beal in press).

Sacrifice and Magic

Although a Hittite ritual handbook cannot yet be written, clear patterns relating to the appropriate uses of animals in ritual have emerged from the texts. These uses are dependent almost entirely on an animal's symbolic power. The deeper the range of symbolic values, the greater its range of uses in ritual sacrifice and magic.

Regular Offerings. Blood sacrifice, whether for divination, meal-sharing, or soliciting divine aid, formed the core of Hittite ritual, which was the primary means of communicating with the gods. Animal sacrifice in the official state religion of Hittite Anatolia virtually always involved domestic livestock, primarily sheep, less often goats, and on important occasions cattle.

Normal sacrifice concerns the official regular attendance to the sustenance of the gods (Collins 1995b). In Hittite ritual, this involved the daily preparation of ritual meals punctuated by monthly and seasonal festivals. Wild animals did not participate in such "normal" or regular sacrifice, since they were not desirable sustenance for the gods. Occasional references to the ritual consecration or dedication of a wild animal (deer, eagle, falcon) to a deity suggest their symbolic importance, but is not evidence that they were sacrificed. When wild animals or pets (dogs and pigs) were killed or eaten in ritual, the purpose was not to feed the gods but served some other, more specialized function, such as purification.

Typically in ritual sacrifice, the victim was brought to the sacrificial altar within the temple in a procession involving singers and musicians, cooks, priests, the sacrificer and other participants. The animal victim had to be of fine quality, healthy, and had to be purified (Kühne 1993: 231–32; Haas 1994b: 650) and consecrated (Collins 1995b: 79–80) prior to the kill. Often the color of the animal was specified depending on the nature of the deity in whose honor it is being offered up. The animal was dedicated to the deity, then its throat was slit as the participants made noise to attract the attention of the deity (Collins 1995a). The animal was butchered on the spot and the meat taken away for preparation by the temple chefs.

The repast (usually a meat stew) was set before the deity and the human guests who, in sharing the meal, reaffirmed their relationship with the divine.

Burnt Offerings and Blood Offerings. Burnt offerings are at home in the Hurrian milieu of southeastern Anatolian and northern Syria (Haas 1994b: 661–67). Birds were the most frequent victim in such sacrifices (rarely is the species indicated), although young animals—lambs and kids—might also be offered in this manner. The birds were killed as offerings to the gods of the underworld, either explicitly or implicitly: "(The exorcist) offers one lamb and eight birds to the (nine) Anunnaki-deities. On three hearths he burns (them) together with flat breads, cedar, oil and honey, and he libates wine and recites (an incantation)" (Collins 1997b: 171). Earlier in this ritual to purge a house of sin, the officiant relates a mythological aetiology for this offering: "He takes three birds and offers two of them to the Anunnaki deities, but the other bird he offers to the Pit and he says as follows: 'For you, O Primordial Deities, cattle and sheep will not be forthcoming. When the Storm God drove you down to the Dark Underworld he established for you this offering.'"

Blood offerings, also introduced into Hittite cult by the Hurrians, involved the slaughter of birds, sheep, or goats, whose blood was smeared over a sacred place, piece of cultic furniture, ritual pit, or a divine statue (Haas 1994b: 665; Beckman in press). The animal was then burned. The stated purpose of this practice was purification:

> They take the two daggers that were made along with the (statue of) the new deity and (with them) dig a ritual pit for the deity in front of the table. They offer one sheep to the deity for *e.* and slaughter it downward in the hole. ... They bloody the golden (image of the) deity, the wall, and all the implements of the new [dei]ty. Then the [ne]w deity and the temple are pure. But the fat (of the sheep) is burned up. No one eats it. (Collins 1997c: 176)

However, for the symbolism of the smeared blood we may need to look to the blood of birth,[4] since in the ritual for the installation of a satellite temple for the Goddess of the Night just cited, the blood anoints a goddess reborn.

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[4] Walker and Dick (1999: 116) suggest such symbolism for the blood present in the *mīš pî* ritual. I am grateful to Ted Lewis for bringing this reference to my attention.

Magic. Apotropaic, fertility and purification rituals are all special actions performed to address a specific problem, such as removing impurity, counteracting sorcery, or protecting newborns. Initiation and appeasement rituals also might involve animals. In such rituals, wild and domestic animals alike were manipulated in a variety of ways to affect the desired result. Such magic rituals were complex and employed traditional methods and proven techniques that formed a ritual "bag of tricks" that the practitioners of the rites could draw upon to address any situation. Among the techniques employed were encircling, whirling, severing, sprinkling, analogy, and substitution. Technique combined with function (purification, initiation, apotropaism) and *materia* (selection of animals, location, implements) to form a complex ritual matrix of overlapping and sometimes seemingly redundant elements, in which endless combinations might be possible.

Animal parts and products were valuable materials in magic ritual. Dog excrement was used in a medico-magic procedure (Collins 1990: 216) in which the practitioner made models of dough mixed with the excrement to represent the demons causing the illness. These were placed on the shoulders of the patient, knocked off (symbolizing the removal of the illness), and then destroyed. Animal pelts are frequently attested, although their purpose is not always clear. Animal heads (often burned) and other body parts (in particular the genitalia), were also used in Hittite ritual (Beckman 1983: 53). Even the soil turned up by ants had magical properties (Collins 1989: 246–47).

In rituals that relied on analogic magic, animals were particularly useful as points of comparison (see also Ünal 1988: 77–78): "As the birds (and) foxes (alt. vultures) devour the life of this sheep, let the birds (and) foxes likewise devour the strength (of) the evil man, of his wives, his children, (and his) troops" (*KUB* 24.14 iv 19'–25'; Collins 1989: 94); "the ram mounts the ewe and it becomes pregnant. Let this town and house become a ram, and in the steppe let it mount the dark earth and let the dark earth become pregnant with the blood, pollution, and sin" (Collins 1997: 171); "jus[t as] the dog [does] not get along with the [pi]g ..." (*KUB* 24.7 i 34; Güterbock 1983b: 157); "just as a single pig gives birth to many piglets, let every single branch of this vineyard, like the pig, bear many grape clusters!" (*KUB* 43.23 rev. 19'–22'; Collins 1989: 317).

Dogs and pigs, both unclean animals, were especially suitable as

materia for purifications.[5] When held up to the body parts of the patient, puppies were able to absorb the pollution in the patient's body. Waving a puppy or piglet over the patient while an incantation was recited similarly transferred the illness from the patient to the animal. One ritual formula of particular interest involves cutting a puppy in half, sometimes along with a piglet and goat. The two halves are placed on either side of a gate, and the participants in the ritual pass between the two halves, which absorb the evils. This formula has numerous parallels in the eastern Mediterranean in antiquity, and appears therefore to have been part of a sacrificial *koiné* in the region (Collins 1990). As with other purificatory peripherналia, the puppy is disposed of, usually by cutting it up and either burying or burning it. Not only humans, but also chariot horses could be purified by passing through the severed halves (*KBo* 10.44; Collins 1990: 220–21). The role of the horse in Hittite ritual is largely limited to such purifications (Beckman 1999: 39; cf. Haas 1994a: 87–88), but note one case in which captive(?) horses are sent back to the enemy, carrying with them the enemy's destruction (Beal 1995: 73–74), as well as the presence of horses in funerary rituals (see below).

Sows, boars and piglets each in its own way contributed to the fertility of the fields and of human beings. Boar testicles are distributed to the local cults in one inventory text and, although their ultimate use is not specified, we may speculate that they were ritually buried in a field whose fertility was sought. Sows too were symbols of fertility, but were used especially to ensure successful childbirth in women (Collins 2001). A ritual designed to ensure that the patient "give [bi]rth often like the pig" requires the the woman stand over a sow while recounting the story of the creation of man. According to the incantation, the river beside which this ritual must be carried out is the source of life, offspring, purity and propagation. Humans were created from its clay-lined banks. Piglets had a dual importance in ritual. As unclean animals, they were effective purificants and were doubly powerful when used in conjunction with a puppy. The association of pigs with the earth and its fertility combined with their inherent uncleanness made piglets desirable offerings to chthonic deities, the Sun Goddess of the Earth in particular (Collins 2001).

[5] The kitchen staff in the temples are specifically instructed to keep dogs and pigs away from the utensils lest they be defiled (McMahon 1997: 220).

Animals served as substitutes for humans in ritual performance. In such cases, the animal acted to divert the anger of the diety from the threatened victim (Gurney 1977: 52–58). Sometimes this is made explicit, as in Maštigga's ritual against family discord. In this ritual, two sheep, one white and one black, are brought in one at a time while the Old Woman recites as follows: "Here is a substitute for you, a substitute for your persons. Let that tongue and that curse stay in (its) mouth," at which point the offerants spit into the sheeps' mouths (Rost 1966: 354–55). Having received the pollution, the animals are then killed and either placed in a freshly dug hole in the earth and covered over, or else burned, the disposition in both cases involving libations of various liquids.

Hittite scapegoat rituals come in a wide variety of forms (see examples in Gurney 1977: 47–52; Janowski and Wilhelm 1993; Kümmel 1968: 305–7, 310–13). Those most closely resembling that described in Leviticus 16 are designed to end plague brought by the enemy. In Puliša's ritual, a ram and ewe are decorated with colored strands of wool formed into a wreath. The wool strands were pulled from the mouth of the king and symbolize the misfortune afflicting him and, by extension, his dying troops. Having received the impurity, the animals are then sent out on the road into enemy territory to return the plague to its source (Collins 1997a: 161–62; see Wright 1987: 45–50 for a comparison with the biblical scapegoat rite).

A more unusual scape"goat" is found in Ambazzi's ritual. When a rodent is offered to the gods as food in this ritual, the offering is not intended in the same way as in regular sacrifice, but is combined with a purification (by scapegoat) directed to dangerous deities (*tarpattašša*-deities) to secure their wellbeing towards the patient:

> She (the officiant) wraps a small (piece of) tin in a b[ow]string. She wraps it around the patient's right hand (and) foot. Then she takes it away from them and transfers it to the rodent and says, "I have taken away the evil from you and transferred it to the rodent. Now let this rodent take it to the high mountains, the deep valleys, the long roads." Then she releases the rodent. § The one who turns before the *tarpattašša*- deities, you take this one for yourself. We will provide another for you to eat. ... They bring another, "clean" rodent, and she offers it to the one who turns before the *tarpattašša*-deities (saying), "You eat." (Goetze 1969: 348–49; Collins 1989: 202–3)

Another unusual variation on the use of a scapegoat is Zarpiya's ritual, which prescribes actions to be performed by land owners when the year is bad. A billy-goat is sacrificed to seal an oath taken to

appease(?) Šantaš and the Innarawanteš-deities who are responsible for the current misfortune. It is not a normal sacrifice—to seal the oath, the participants must take a bite of the goat's liver and sip its blood through a straw. After the gods have had their fill of the repast (thereby agreeing to witness the oath), nine boys are brought in. One dresses in goatskin and howls like a wolf. The youths then devour what is left of the goat sacrifice, including the liver and heart.

More mainstream deities receive a rodent as a food offering in a ritual against sorcery although, in this case, the purpose is not to commune with the gods in a ritual meal but to secure the safety of the patients (here, the royal couple) against the evil directed at them. The cult images of the Storm God of the Oath and his entourage are placed on a nearby rock while a rodent is offered "for the sorcery of the tongue" (i.e., curse), and the entrails and shoulder are roasted. The roasted portions are left on the rock (near the cult images?) and the remainer is burned. A second rodent is then sacrificed, its blood allowed to drip over loaves of bread, and it too is roasted (Szabó 1971: 42–47; Collins 1989: 203–5).

Wild animals were not used for purification or fertility.[6] These are areas where domestic animals were no doubt best suited. As part of the society of humans, domestic animals (puppy, piglet, goat) could effect a purification, or magically cause a field to produce an abundance of grain (sow). Wild animals on the other hand were better suited to apotropaic uses or to hunt-related ritual themes.

Dangerous animals, including the lion, leopard, wolf and snake, were exploited ritually primarily in incantations of an apotropiac nature. Pittei's Ritual to protect a newborn incants, "Whoever should prepare evil for this chil[d], let him see the broad heaven. Let him see the yawning(?) earth. ... The springing lion likewise (let him see). The prowling wolf let him see. The feet [of] the snake let him see.—Whoever gives the evil eye to(?) this child, whoever prepares evil for him!" (Beckman 1983: 178). Rarely, live animals might be included in ritual. A handful of ritual fragments suggest that living lions may have been used during the performance of certain rituals. Such animals, besides their apopotropaic function, may also have been considered demonic, as would appear to be the case in the following incantation from a festival for the goddess Teteshapi: "'The wild

[6] Frogs and salamanders(?) seem to be an exception to this rule. Both are unclean and were therefore used in purifications (see attestions in Collins 1989: 226–30).

goat (and) the lamb are on the *h*. When I go, be afraid for me regarding the leopard and the wolf! *l*. the water!' This (is) Teteshapi: 'The priestess went, and when I go, be afraid for me (regarding) the le[opard] (and) the wolf! *l*. the water!' This (is) Teteš[hap]i." (Collins 1989: 86–87 for literature).

The use of eagles in ritual was determined by their connection to the royal house. Ritual manipulation of eagles falls into four categories: 1) Entreaty using a live eagle that is whirled over the king and queen to establish a connection while an incantation for the long life of the king and queen is recited. When the eagle is then released to the sky, it is expected to convey the request for long life to the gods; 2) Evocation of the gods using an eagle's wing, in which the wing symbolically supplies the means for the gods to come into the presence of the human participants; 3) Purification of sacred spaces (temple and palace), and of humans (probably members of the royal household), using live birds, typically an eagle and a falcon in combination with other large bird varieties. 4) In the Hurrian *ḫišuwaš* Festival, the eagle is put to a unique use: The "Crier" dips an eagle's wing into a cup of water and uses it repeatedly to sprinkle the water on the king. Finally, eagle-shaped rhyta are sometimes specified for use in rituals for important deities.

Fish too were manipulated in ritual. Maštigga's Ritual prescribes waving a fish over the patient in combination with this incantation: "'This fish is the bull of the sea and just as this fish has been separated from the sea, now let the tongues and curses of those days be separated.' And she throws the fish on the hearth" (Rost 1966: 350–51). Fish are waved over a patient again in the *pabilili*-ritual (*CTH* 718), which also contains an incantation that employs fish and fowl to carry off the sins of the patient to the sea and the sky respectively. Although not presented as offerings to the gods, fish are nevertheless listed in inventories of animals and materials destined for cultic use (e.g., *KUB* 30.32).

Animals as Grave Goods

Known Hittite cemeteries are rare, but the handful that have been found are consistent in the scarcity of grave goods accompaning the deceased, whether cremated or interred. This means either that the known cemeteries were all for the use of the poor, or else that sim-

ple burial was the rule in Hittite Anatolia (van den Hout 1994: 55–56).

The cemetery outside ancient Hattuša, at a site called Osmankayaşı, contained both cremated and inhumed remains accompanied by small quantities of everyday pottery. "Sometimes complete animals were buried alongside: oxen, pigs, sheep and goats, or equids, mostly mules; often only their heads are found. The equids were all males at the height of their strength" (van den Hout 1994: 55). The eighth day of the Hittite Royal Funerary Ritual describes the sacrifice of several animals and the immolation of animal heads to accompany the deceased: "'Behold, the pig (rhyton) has diverted water, and may (it) be [...] to yo[u]. [May?] oxen, sheep, [ho]rses, (and) mules satis[fy their thirst?].' One ox (and) seven sheep [...] slaug[hter(s)] down into the well" (van den Hout 1994: 67, lines i 11'–13'); "[...] a jug of wine they break and the pickaxe (and) the shovel they [b]urn on that spot. The ashes, however, they pick up and pou[r] them out there, where the horses' heads (and) the oxen's [head]s were burnt" (van den Hout 1994: 68, lines i 28'–31').[7]

One prayer on behalf of the deceased may explain the purpose of the animals: "'This (piece of) meadow, O Sungod, have it made rightly his! Let nobody deprive him of it, let nobody contest it, and may oxen and sheep, horses (and) mules graze on this meadow for him.' They bring the (piece of) meadow there, where the horses' heads (and) the oxen's heads were burnt, and they pour it thereon" (van den Hout 1994: 69, lines ii 1–6). Hence it appears that royals and non-royals alike required the continuing service of their livestock in death.

The Hunt Ritualized

Although rare in blood sacrifice, wild animals, specifically game animals, feature prominently in festivals that seem to have a subcontext with hunting as the central theme. The sacred nature of the hunt in Anatolia can perhaps be traced back to the scenes of ritualized hunt/dance on the wall-paintings from Çatal Höyük (fig. 11.1), and the fact that the hunt continued to occupy a special place is evident in Late Bronze Age sources (see also Archi 1988).

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[7] Compare the ritual burial of horse heads in early kurgan tradition (Mallory 1981: 221).

Animals of the Gods. Several lists of animals, occurring in a variety of text genres in the Hittite material, are attested that include the leopard, lion, boar, bear, deer, and optionally the wolf, gazelle, and wild goat (for texts see Collins 1989: 298–99). These stock lists includes all of the big game animals, and the KI.LAM Festival identifies them as "animals of the gods" (*šiunaš ḫūitar*), a phrase that may signify their special importance in Hittite religious ideology.

The procession in the KI.LAM Festival begins with the "animals of the gods" and the "masters of the words." They are followed by performers, oxen-drawn carts, and dancers. Next come priests of the Protective Deity, who in some of his forms is a hunting god. These are followed by spears, copper *kurša*-fetishes and then again the "animals of the gods" (leopard, lion, boar, bear, gazelle). In a parallel version, the "dog-men" or "hunters" follow. After some singing in Hattic by the men of the town of Anunuwa, the deer standards follow, drawn by various officials. The procession then exits through the upper gate. Later, the king is relieved of the ceremonial iron spear with which he was presented before the ceremony, and it is replaced with an iron axe. It is perhaps too fantastic to see in this act an acknowledgement of the transition from hunting, symbolized by the spear, to sacrifice, symbolized by the axe (used to kill the sacrificial animal).

Man as Animal. Animal behavior is not uncommon in the context of Hittite ritual. For instance, in Zarpiya's Ritual, one of a group of young boys is dressed in a goat skin and made to howl like a wolf. Elsewhere, ritual dancers crouch "like leopards." Among the numerous cult functionaries attested in Hittite religious documents, a few bear professional titles drawn from the animal world. The lion-men, leopard-men, bear-men, wolf-men and dog-men are attested with varying degrees of frequency and are seen performing a wide range of ritual and religious duties. All of the animals in these titles are counted among the "animals of the gods" except the dog, whose role in the hunt was as the hunter's companion.[8]

The activities of these functionaries are varied. They dance (wolf-men, bear-men), run (wolf-men), bark (dog-men), sing (dog-men), and assist in administrative activities. But it is clear that their primary function is to role-play in ritual performance, taking on the behav-

[8] Note in this context their frequent association with archers (*miniya*-men) and with *ḫapiya*-men (who are also almost certainly a category of human hunter).

ior of the animals whose names they bear. In one ritual performance, "the female archer shoots one time with an arrow (at) the bear-man. She misses him, but she shoots a second (time) and pierces him. She shouts, '*awaiya, ayaiya*!'" (Collins 1989: 100). The Festival for Tetešḫapi seems also to have a hunting theme, with the leopard-men playing a prominent role. At one point, "[they c]hase the leopard-man up into the mountains" (Bo 6594 i 11'; Collins 1989: 303). Does this performance have to do with a mock hunt or a ritualized removal of the forces of destruction from a vulnerable village? In any case, the ritual treatment of the bear- and leopard-men is part of a single phenomenon in which humans behave like animals in ritual enactments that relate to the hunt.

Rost has suggested that, in light of their frequent association with proto-Hattic deities, the animal-men are a holdover from a pre-Hittite practice of animal totemism in which the strength and protection of the animals were sought through a cultic masquerade that included dressing in in animal masks and skins (1966: 420–21). How the Hittites understood their symbolic function, however, is another question entirely. Rost suggests they served an apotropaic function, as their real animal counterparts are known to have done in other religious contexts. The iconography offers little support for the possibility that these ritual functionaries wore animal masks or hides. One exception is fig. 11.7, where a human(?) musician plays a tamborine and wears(?) an animal (goat?) head. But this creature is not one of the "big game" animals under consideration.

Conclusion

The Hittites were both heirs to, and ancestors of, a rich potpourri of religious traditions, in which animals played a key role. Hittite religion did not die as quickly as did the Empire that defined it. Traces of Late Bronze Age traditions can be found in the next well-documented era, that of Greek Asia Minor in the Classical Age. These traditions were transmitted at least in part by the native Iron Age kingdoms of Anatolia.

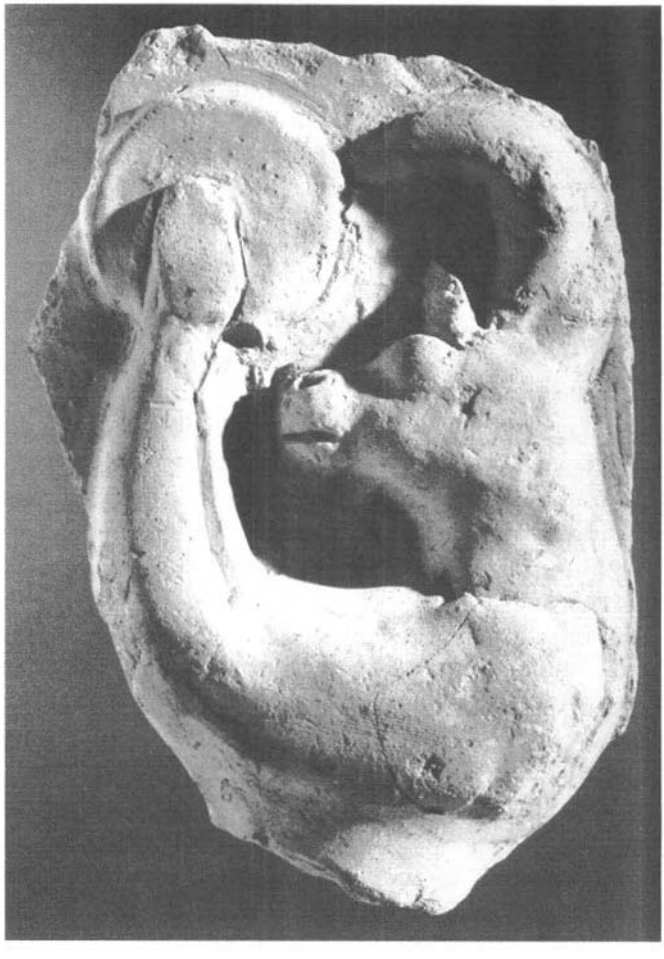

Fig. 11.7. Pottery sherd with relief decoration of a tamborine payer wearing an animal mask. Hattuša. Ca. 1500 B.C. H. 14.4 cm. After Bittel (1976: 144).

THE FIRST MILLENNIUM B.C.

After the eclipse of Hittite power in Anatolia at the close of the second millennium, we are once again faced with a shortage of indigenous written evidence for the religious ideologies, official or popular, of the various political and cultural entities that shared the Anatolian peninsula. The iconography gives us some clues to understanding divine representation, but the role of animals in religious observance, with few exceptions, remains a question.

The Neo-Hittites

Direct heirs to Hittite ideology, the Neo-Hittite states of the early first millennium carried on some of their iconographic traditions. In particular, the imagery of the deer, lion and bull seem only to grow in significance at this time. Lion statuary guarding cities and buildings continues to identify royal power centers at Malatya, Carchemish, Zincirli, Tell Açana, Sakçagözü and Maraş, among others. Reliefs of the Protective Deity on his stag continue to appear at Karasu, Malatya, Kültepe, and Haci Bebekli (van Loon 1990: pl. IIIa [Malatya], pl. V [others]). This god was allegedly identified later with Greek Hermes at Corycus in Cilicia, where local priests bore theophorous names with the element Ru(nt) (Houwink ten Cate 1961: 212–14; Popko 1995: 168). A variation on the theme can be seen in the relief from Zincirli (Sam'al; ca. 925–875 BC) of a lion-headed being holding a hare while two birds perch on his shoulders (van Loon 1990: pl. XIV; Bittel 1976: pl. 302). Such mixed beings, including also bull-men, lion griffins, winged lions, and sphinxes, are popular in relief art (Orthmann 1971: 306–50). Further testimony to the endurance of Hittite religious themes is a relief from Malatya that appears to illustrate a myth of the Hittite period recording the great battle between the Storm God and the mythological serpent Illuyanka, personifying the forces of stagnation and death (Bittel 1976: pl. 279).

Kubaba, the city goddess of Carchemish, enjoyed prestige at this time. She is carved in relief on the processional entry to her city, enthroned over a crouching lion, her favorite animal attribute. At Malatya though, she is seated over a bull (van Loon 1990: pl. XIII), while Karhuha in the same relief stands on a lion. This switch in the animals normally associated with these deities should not be assumed to be a confusion of iconographic traditions, but may indicate instead that the lion was simply not an indispensible part of Kubaba's iconography. Rather than defining her nature, the lion, as in the Hittite period, was a symbol of the royal house (it is also found with the sun and moon gods at Carchemish), and its symbolic attachment to the gods was not to serve as their attribute, but to symbolize the relationship between the deity and the royal house.

Phrygia

Phrygian artists decorated pottery with a variety of painted animals, and zoomorphic vessels, including rhyta, are found. But the most cultically relevant use of animals is in the animal attributes of the Phrygian Mother, which included predatory birds, lions, and fantastic creatures (Roller 1999: 109). The bird of prey is the most ubiquitous symbol of the Phrygian Mother (Roller 1999: 148 and *passim*), and perhaps provides the best clues to the deity's character as a goddess of power and protection. Images of the bird alone (e.g., Midas City, van Loon 1990: pl. XXXIV) may have been intended to evoke the goddess (Mellink 1983: 352–54).

Lydia

Herodotus (V.102) refers to Kybebe as the patron goddess of the Lydians (although Hanfmann disputes her preeminence [1983b: 92]), and an altar dedicated to her and framed by lions was situated near the gold refinery, source of the city's wealth. Roller asserts the dual nature of the lion in cult objects dedicated to Kubebe: "it advertised the goddess's power and also reinforced the power of the Lydian king by symbolizing the support he enjoyed from Kubaba/Meter" (1999: 131). According to Herodotus (I.84.3), Sardis was vulnerable to Persian attack only because the early king Meles had failed to follow the advice of the Telmessian prophets, and circle the entire city with the lion his concubine had borne him, leaving unprotected a precipitous area that was thought to be impenetrable.

Two snakes frame the figure of Kybebe on a temple model from Sardis. The object bears decoration on the back; the top panels with mythological scenes showing a sacred tree protected in turn by birds of prey and lions (note that the name of the ruling dynasty of Lydia derived from *mermnos* "hawk"). The city goddess stands in the threshold of her sanctuary, holding a lion and framed by a pair of snakes. The snake is given special prominence at Sardis, and was symbolic perhaps of the fertility of the earth and immortality (Hanfmann 1983b: 92 and n. 20). Herodotus (I.73) describes an omen that preceded the fall of Sardis to the Persians: Snakes swarmed into the suburbs of the city upon which event, the horses in the fields came and ate them. The Telmessian prophets interpreted the snakes, which "sprang from the soil," as representing the people of Sardis, while the horses symbolized their foreign attackers. If this symbolism can

be extended to Lydian art, then the model temple, with its snakes symbolizing the people of Sardis and its birds of prey and lions symbolizing the royal house, would have served to reinforce the relationship between the Lydians and their patroness.

Besides lions, boars, and birds of prey, Lydian art depicted bulls, horses, deer, goats, geese, fishes, snakes, pegasoi, sphinxes, and griffins—most according to Greek tastes. Animals are depicted on objects of the minor arts, which may have beem amuletic (Hanfmann 1983b: 95). A *potnios theron* (Apollo?) was shown in a sixth century terracotta frieze holding a sphinx by the tail, and elsewhere with lions (Hanfmann 1983b: 94 and fig. 163).

Animal sacrifice continued to feed the gods. Kybebe's altar contained traces of burned remains of animal sacrifice. The ritual slaying of a bull in honor of the Anatolian goddess Ma was also attested at Sardis according to an inscription dating to 367 BC (Hanfmann 1983b: 86). A column fragment from Ephesus from this period (mid sixth century BC) depicts a priestess carrying a tray with offerings, including animal (bull?) heads (van Loon 1990: pl. XLIVb). Food taboos were also observed. Such were the rule on special days in the cultic calender for Attis at Pessinus, when fish and pork, among other items, were forbidden. The latter prohibition, according to tradition, was in memory of his death by a boar sent by Zeus (Hepding 1967: 157; see Pausanias 7.17.9 for the legend). The boar, as damager of fields and a dangerous quarry, appears to have been a symbol of evil in Lydia, and the story of the death of Croesus' son Atys during a boar hunt (Herodotus I.34–44) is mythologized in the legends of Attis and Adonis (Hanfmann 1983b: 95 and n. 68). Similarly, at Comana (Hittite Kummanni) in the Pontus, Strabo (*Geog.* 12.8.9), writing in the Roman period, tells of bans on eating pork and even on bringing pigs into the city, an extension, it seems, of the city goddess' aversion to the animal.

Finally, excavations at Sardis revealed an unusual collection of ritual offerings. Buried beneath the floors of modest shops and houses dating to ca. 575–525 B.C., the excavators found nearly thirty deposits of pottery each representing an intact buried ritual meal comprising serving dishes and a meal of a whole puppy, bread(?) and wine. These may have been offerings to Hermes Candaules, guardian of the house and bearing the epithet "dog throttler," who, according to Robertson (1982: 138) may have his ancestry in the Hittite god Hašameli, although the evidence is largely circumstantial. Us-

ing Maštigga's Ritual as an example, Robertson further suggests a Hittite origin for the burial of food as an offering, although it must be pointed out that the Hittites would not have considered puppies as suitable offerings, even for Underworld deities.

Lycia

The limited evidence from the region of southern Anatolia from the sixth century B.C. on allows us a glimpse into the funerary and divinatory practices of the Lycians. Tomb inscriptions mention the payment of cattle as a penalty for violating a tomb and, in some cases, tomb owners may have been entitled to a kind of funerary cult, with sacrifices made in their honor (Bryce 1980; 1986: 126). Greek inscriptions from the Roman period include lists of sacrifical offerings comprising a cock and a fowl made by descendents or heirs of a tomb owner at certain times of the year. Funerary beliefs include the idea that the souls of the dead were carried away by spirits similar to birds. The Harpy Monument at Xanthus depicts birds with women's heads carrying away the dead (Popko 1995: 175).

Also attested in the sources of the period is evidence of a widespread and famous tradition of divination that was peculiar to Lycia, although whether the practice was of Anatolian or Greek origin is unclear (Bryce 1986: 198). Certain cities, like Sura, served as oracular centers, where icthyomancy was practiced. The observation of fish could take a variety of forms, as attested in various Classical sources. In some cases, the movements of the fish relative to each other and their environment determined the nature of the response, which was interpretated according to fixed rules. Elsewhere, the fish were thrown the flesh of a sacrificial calf and the response was determined by whether the fish ate or rejected the offering. The species of fish also played a role in determining the outcome of the oracle in some cases (Bryce 1986: 196–99).

CHAPTER TWELVE

ANIMALS IN EGYPTIAN RELIGION

EMILY TEETER

Egyptian religion is highly charged with animal iconography. The role of animals in Egyptian religion is generally misunderstood and their significance overestimated, largely because of the misconceptions of Greeks and Romans who visited Egypt in antiquity. Herodotus (ca. 500 B.C.) correctly reported that animal worship involved "praying to the god to whom the particular creature, whichever it may be, is sacred" (II.65), hence that the Egyptians worshiped the god in his living image of the animal. Yet later Classical authors, such as Diodorus (first century B.C.) wrote that "the Egyptians are fanatically addicted to the worship of certain animals, the dead as well as the living" (Diodorus I.83) intimating that it was the animal itself rather than the deity that was the focus of the cult. Lucians' famous dialogue of the second century A.D. contained this disdainful passage:

> But you, you dog-faced Egyptian, dressed up in linen, who do you think you are my friend? How do you expect to pass for a god, when you howl as you do? ... I am ashamed to mention the ibis and the apes, or the goats and the other far more ridiculous creatures from Egypt who you have crammed into heaven, goodness knows how. How, gods can you tolerate seeing them worshiped on equal terms with yourselves or even honored above you?[1]

Consider also the judgment attributed to the Persian king Cambyses: "Do you call that [the Apis bull] a god, you blockheads? Are your gods flesh and blood? ... No doubt a god like that is good enough for the Egyptians; but you won't get away with trying to make a fool of me" (Herodotus II.29).

[1] *Decorum concilium* 10–11, translation from Hornung (1982: 15).

DIVINE REPRESENTATIONS

The foreign misconceptions, bewilderment, and even contempt for animal gods was fueled by representations that were completely unfamiliar (Smelik and Hémelrijk 1984). Not only were the gods shown in what was considered to be base zoomorphic representations, but still stranger and more barbaric were the mixed forms (therianthropic). The fact that a single god could be represented in several different ways only did more to convince people of other cultural backgrounds that the Egyptians were either overly mystical or simply gullible.

Indeed, one of the most fascinating features of animals in Egyptian religion is their use of representations of the gods and the variability in those representations. A single deity might be represented zoomorphically, therianthropically, and anthropomorphically[2] and conversely, a particular animal could represent a variety of deities (Table 12.1).

Nearly every species of animal in Egypt was at some point associated with a deity, notable exceptions being the horse and the hedgehog. Identifying which god is being represented is not always simple, since Anubis, Wepwawet and Duamutef are all shown as a jackal, a cow may be the goddess Hathor or Mehetweret, and a falcon-headed god can represent a tremendous range of gods (Re, Re-Horakhty, Horus, Horus-Son-of-Isis) whose identity cannot usually be determined without an accompanying caption (see Table 12.1).

The mixed forms, perhaps the most characteristic and distinctive feature of Egyptian iconography, usually placed an animal head on a fully human body (fig. 12.1). The junction of animal and human elements was delineated and defined by a broad beaded collar. In rarer cases dating from the New Kingdom onward, the god's head could be replaced by an entire animal, such as the scarab beetle, which emerges from the shoulders of the god Khepri. In other cases (Selket and Hatmehyet) the animal emblem of the deity (a scorpion and fish, respectively) could simply rest upon, or be attached to the fully anthropomorphic head. More rarely, a human head was placed on an animal body, the best example being the androsphinx, which in the royal context symbolized the king in his leonine aspect.

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[2] For example the god Horus could be shown as a man often with the royal crown, as a falcon-headed man or as a falcon.

Table 12.1. Animals and their principle divine associations and identification.[3]

Baboon	Hapi
	Hedjwer
	Khonsu
	Thoth
Black kite/Kestrel	Isis
	Nephthys
Bull	Apis
	Atum
	Buchis
	Kamutef
	Mnevis
Cat	Atum
	Bastet
	Hathor
	Isis
	Mut
	Tefnut
	Re
Centapede	Sepa
Cobra	Wadjet
Cow	Bat
	Hathor
	Isis
	Mehetweret
Crocodile	Sobek
Donkey	Seth
Egyptian Goose (duck)	Amun
Falcon	Horakhty
	Horus
	Horsiese
	Khonsu
	Montu
	Nemty
	Quebehsenuef
	Re
	Re-Horakhty
	Sokar
Fish	Hatmehyet
	Hathor
	Neith
Frog	Heket
Gazelle	Anukis
Hare	Wenut
Hippopotamus, lion and crocodile hybrid	Seth
	Taweret
Ibis	Thoth
Ichneumon	Atum
	Horus
	Khatery
Jackal/dog	Anubis
	Duamutef
	Khentyimentyw
	Wepwawet
Latus fish	Leontopolis
Leopard	Mafdet
Lion/Lioness	Hathor
	Mahes
	Mehyt
	Mut
	Nefertum
	Pakhet
	Sekhmet
	Shu
	Tefnut
	Wadjet
	Aker
pair, or double	Rwty
Lizard	Atum
Oryx	Seth
	Sokar
Pig	Seth
Ram	Amun
	Atum
	Banebdjed
	Herishef
	Khnum
Scarab	Atum/Re
	Khepri
Scorpion	Selket
Serpent	Apophis
	Hathor
	Isis
	Mehen
	Meretseger
	Nehebkau
	Nephthys
	Renenutet
	Shay
	Wadjet
	Wenut
	Werethekau
Shrew	Horus of Letopolis
Sow	Isis
	Nut
Turtle	Apophis
Vulture	Mut
	Nekhbet

[3] I thank Patrick Houlihan for his suggestions in compiling this table.

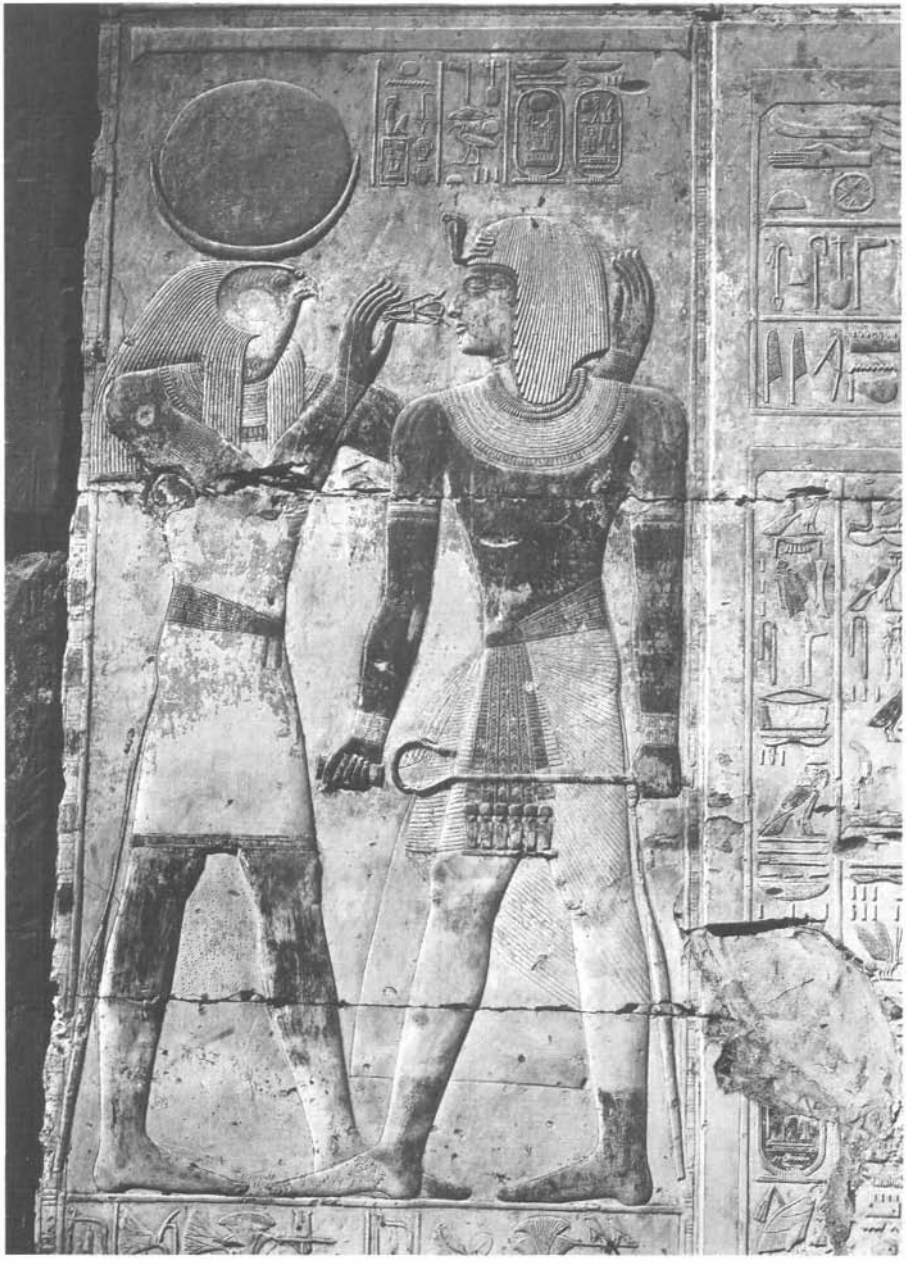

Fig. 12.1. Animal headed deity (Khonsu) in the temple of Seti I at Abydos. 19th dynasty, ca. 1290 B.C. Note how the junction between animal and human anatomy is delineated by a broad collar. Photograph by Gaddis and Seif. Photo courtesy The Oriental Institute of the University of Chicago.

The combination of human head on an animal body is otherwise generally restricted to a variant form of the deities Meretseger and Renenutet known from Late period faience amulets (Andrews 1994: 35).

Elements of animals (feathers, tails etc.) served as identifiers for deities shown in human form. A goddess with an ostrich plume on her head is Maat; a woman with the curved lyre horns of a bovine and two tall feathers may be Hathor or Isis (or other goddesses), a dwarf dressed in a leopard skin is Bes. Two tall feathers flank the crown of Amun, four feathers rise from the headdress of Inorus and Atum, and a single ostrich plume is characteristic of Shu. A deity might be identified by standing upon an animal. This form was employed mainly for the representation of Asiatic gods, like Qudshu, who stands on the back of a lion.

Egyptian iconography less frequently employed fantastic composite animals. The most prominent is Seth who is shown as part jackal, part dog and other imaginary elements (te Velde 1977: 13–26). Winged cobras and human figures with wings protect the king or the royal cartouches. Sphinxes came in various forms; the androsphinx (human head on lion body), criosphinx (ram head on lion body), hieracosphinx (falcon head on lion body), and a cobra-headed sphinx. Another such composite is Ammet, a combination of a hippopotamus, lion and crocodile who consumed the soul of the damned. Amulets in the form of a cow-headed snake are perhaps to be identified as a form of Isis-Hathor. Animals could be combined into hybrid forms—Nekhbet, a vulture deity commonly shown hovering over the head of the king might be shown with a serpent head, thereby forming a syncretistic form of Nekhbet and Wadjet (Nelson 1981: pls. 26, 35, 45).

The form of representation was not dependent upon time period or, seemingly, upon function; indeed the reason why one form was employed over another can only be surmised, for example the therianthropic form was probably preferred in the myriad scenes of the king offering to the gods that decorate the walls of temples because such a composition maintained a similar scale of representation between the offerer and the recipient of the offering. Yet there are examples of the king offering to a falcon form of the god Horus and the jackal of Wepwawet (Calverley and Broom 1939: pl. 16).

Animals that are frequently viewed as inimical were not avoided in the representation of deities. Selket whose head was topped with

a scorpion was one of the protective deities of the deceased. Other animals, specifically snakes and the hippopotamus, were highly ambivalent in nature. The cobra is a common element of divine and royal crowns, and it's coils encircle and protect the sun god in the darkness of the underworld, yet the serpent Apophis is the arch typical evil god and the enemy of the sun god. In a similar way the hippo can represent the god Seth, the traditional enemy of Horus, yet figurines of hippos, painted with floral designs that evoke regeneration and rebirth, were left in private tombs. Often the only way that the good can be differentiated from the evil is by the context, or more fundamentally, by a caption or label.

As with many aspects of Egyptian culture, the use of animal forms to depict the gods does not follow standard anthropological models, which suggests that such depictions are rooted in totemism (te Velde 1980: 79). According to this theory of development, the gods were initially worshiped in their animal forms observable in nature. Only later did the mixed forms, and finally what might be perceived as the most sophisticated anthropomorphic forms, develop. This idealized progression cannot be applied to Egypt (te Velde 1980: 79). Although the earliest depiction of a god (from the tomb of Djer, Dynasty One) is wholly zoomorphic,[4] the anthropoid form of the god Min appears in Dynasty 0 or early in the First Dynasty (McFarlane 1995: 164–66; Dreyer 1995). The therianthropic forms that might possibly be interpreted as transitions from animal to human form are attested by the goddess Bat, shown with a human face and cow horns and ears on the Narmer palette and on an ivory carving from the tomb of Andji-ib of Dynasty One (Petrie 1900: pl. XXVII.71), and by falcon-headed and Seth-headed deities on seals from the tomb of Peribsen at the end of Dynasty 2 (Petrie 1901: pl. XXI.176, 179). Some prominent deities (Ptah and Min) were never shown in animal form, their first appearance in the Early Dynastic era being wholly human.

So too a god could be represented by several different animal species (Thoth as an ibis or as a baboon; Bastet as a lion or a cat), making it less likely that a god was identified by its ancient totemic animal. However some animal forms can be associated with the

[4] Note that there is disagreement whether animals that appear on top of standards of the Naqada II period should be interpreted as deities. See Hornung (1982: 101) for a brief discussion with references.

attributes of the god. For example Anubis, the god of the necropolis, is depicted as a desert jackal, an animal that commonly roams the cemetery at night, and Hathor, a mother-fertility deity was shown as a cow. However, more often, the association of the deity and the animal form is not clear, and representations of Amun as a goose (which is more properly a large duck), and Thoth as an ibis, among many such examples, have defied explanation.

There is considerable controversy regarding the use of animal masks in Egyptian cults. It has been suggested that scenes showing animal-headed deities are to be interpreted as priests wearing animal masks (Wolinski 1996). Others find this doubtful during the pharaonic period, but a greater possibility during the Late period. Physical evidence for masking during the pharaonic period is limited. Examples include two pottery masks from the Predynastic levels of Hierakonpolis (Adams 1999: 4), a cartonnage mask-like object representing the god Bes from the Middle Kingdom site at Kahun (ca. 1890 B.C.; Petrie 1890: 30; Pinch 1994: fig. 71), New Kingdom (ca. 1350 B.C.) representations of lion-headed masks used by priests during rituals of the jubilee (Wente 1969), and a baked clay helmet-like mask of Anubis from the Late period (ca. 600–300 B.C.; Pelizaeus-Museum, Hildesheim 1585 in Wolinski 1996: fig. 62). Additional evidence for masking is provided by a relief in the temple of Hathor at Dendera that shows a priest in a jackal-headed helmet mask being guided by another priest (in Wolinski 1996: fig. 63). The proponents of masking in the pharaonic period tend to ignore the nature of Egyptian art—that it is symbolic rather than representational, and that it was not composed to give a true appraisal of the object but rather the significance of the object portrayed (Bianchi 1996). Most Egyptologists believe that the scenes of the animal-headed gods portray the mythical, divine sphere of therianthropic gods, not a parade of priests wearing masks.

ROYAL REPRESENTATION

Animals were important symbols of the king and state. The king was the living Horus, who was represented by a falcon. Most of the forty-two administrative districts (nomes) of Egypt had animal emblems. The land was seen in terms of duality—the northern section being under the protection of the cobra deity Wadjet, while the south was

under the vulture Nekhbet. In the New Kingdom, these two animals were paired on the brow of the king's crown or diadem (Russmann 1997: 268–70). The cobra was an element in other parts of the royal regalia. Scenes of Seti I at Abydos show the king (as well as gods) with an ornate crown, surrounded by a band of rearing cobras with solar disks on their heads (Calverley and Broome 1938: pls. 31, 41). The *atef* and the *hemhem* crowns were composed of one or more tall tapering forms flanked by bird plumes. Their bases were composed of a pair of twisting horizontal ram or sheep horns which supported rearing cobras. A protective cobra hanging from the disk of the sun was a motif that was commonly depicted over the head of the king. He wore a sporran decorated with a row of cobras. Some examples of the royal kilt are ornamented with the *sjꜣt*-amulet in the form of a tiny swallow who was a messenger of the sun god (Patch 1995: 110). From the Archaic period, the king, as well as most male deities, wore a highly stylized bull's tail, a symbol of his virility and an echo of his epithet "the strong bull" (see chapter 8). A surviving example of such a tail is made of colored beads (Patch 1995: fig. 9). The king was often pictured in a curaisse decorated with scale-like bird feathers. The addition of a curved ram horn to the crown of the king was a proclamation of his divinity—an iconographic device that continued to be employed in Egypt from the Eighteenth Dynasty into the Ptolemaic period (fourth–first centuries B.C.).[5]

The regalia of queens also incorporated animals. Most prominent was the vulture crown. The body of the bird formed the cap of the crown and the wings swept back over the woman's ears. The vulture cap was often topped with a modius with two tall bird plumes and a sun disk. Although the symbolism of the vulture crown is obscure, it was also worn by goddesses (Calverley and Broome 1938: pls. 31, 33, 34, 40 *passim*), suggesting that it expressed the divinity of the queen.

Priests also wore costumes and emblems derived from animals. Several classes of priests, including the *sem* and *Iwumuetf* priests wore a leopard skin cloak (Faulkner 1994: pl. 12). Other classes of priests wore fabric copies of such skins. The pelt-like robe of the high priest of Heliopolis was decorated with stars that substituted for the animal's distinctive spots. An example of such a garment made of fab-

[5] This symbol was borrowed by the Greeks for the representation of Zeus. In Lucian's *Decorum concilium*, Momos questions Zeus: "And you Zeus, how can your bear it when they transplant a ram's horns onto you?" (translation from Hornung 1982: 15).

ric with gold stars was recovered from the tomb of Tutankhamun (ca. 1325 B.C.; Carter and Mace 1923: 113; Edwards 1976: 105).

COSMOLOGY

The Egyptian cosmology incorporated many animal images. The newly born morning sun was equated with the scarab-form god Khepri while the setting sun was associated with Atum who, in the new Kingdom and afterward, was portrayed as an archaic form of sheep with corkscrew horns. These deities were, according to some renditions of the cosmologies (Book of the Day and Night), envisioned as crossing the sky in a boat drawn by four jackals and adored by baboons. In the introductory vignette to the Litany of Re, which appears inside the portals of Ramesside royal tombs, Khepri and Atum within their disk are shown repelling evil in the form of a snake, crocodile and a hartebeest(?) with a single spiraling horn or burning wick on its forehead.

According to other conceptions of the universe, the sun traveled across the sky in the simpler form of a scarab beetle with wings, or it emerged from the primordial darkness on the horns of a celestial cow. The creation of the world was heralded, according to some versions of creation, by the screeching of the *benu*-heron or by the cry of the goose called the "Great Cackler." The Heliopolitian myth claims that Atum, the creator god emerged from a bird's egg, while other legends relate that life emerged in the form of the falcon from a bird's egg. The stars of the night sky were organized into constellations, many of which were zoomorphic (and familiar to people today)—a bull, lion, hippo, crocodile and a falcon-headed deity.

The realm of the afterlife was also inhabited by animals. As documented by scenes from the underworld books in the royal tombs (Amduat, Book of Gates, Book of the Heavenly Cow) (Hornung 1984: 1990), and on funerary papyri, the boat of the sun god Khepri-Atum was protected within the coils of a protective serpent. The serpent, with its highly ambivalent nature was a major denizen of the underworld. Apophis, the harbinger of chaos and incarnation of evil, was shown in the form of a snake, yet this same dangerous creature, tail in his mouth, was associated with rebirth in the form of the ouroboros that encircled and protected the hieroglyph for the reborn sun, symbolizing the cyclic nature of the Egyptian cosmos and

its emphasis upon eternal rebirth (Hornung 1990: 107).

The guardians of the portals of the underworld were fantastic composite beings with human bodies and the heads of cats, serpents, gazelles, monkeys, dogs, jackals, crocodiles, birds and other creatures. The Ninth Hour of the Book of Gates was inhabited by a snake that spewed fire at sinners. Other hours and caverns of the underworld were populated by snakes that sprouted wings and legs, and by birds with human heads. The depths of the underworld (hour 6 of the Amduat) was inhabited by Rwty, a double bodied lion who symbolized yesterday and tomorrow. The eighth hour of the Amduat was inhabited by screaming cats, whose deafening roar was equated with the cries of the eternally damned.

One New Kingdom composition, the "Book of the Heavenly Cow," which decorated the largest funerary shrine of Tutankhamun and the walls of the tombs of Seti I, Ramesses II, Ramesses III, and Ramesses IV, relates how the sun god retreated from mankind on the back of a cow. In the course of the texts, the night sky was associated with the spotted body of the divine cow and her legs with the supports of heaven (Piankoff 1955: 26–37).

As reflected in the texts of the Book of the Dead, the afterlife was a place of animal imagery. The weighing of the heart of the deceased to evaluate his worthiness for rebirth took place in the presence of Anubis, the jackal god of the necropolis (Faulkner 1994: pl. 3). Thoth, the ibis-headed scribe recorded the judgment of the deceased before the scale, and the baboon form of the same god guarded the balance. The monstrous creature Ammet stood ready to devour the heart of the damned (fig. 12.2). Chapter 17 describes how Re in the form of a tomcat slew the serpent Apophis with his knife (Faulkner 1994: pl. 10). The vignette for the rubric of Chapter 125 shows the Lake of Fire, protected by four baboons (Faulkner 1994: pl. 32).

The preparation for life after death likewise was full of animal imagery. One aspect of the soul of the deceased, the *ba,* was shown in the form of a human-headed bird (fig. 12.3; Faulkner 1994: pls. 7, 17). The *ba* spent the dark hours of the night with the mummy, but during the hours of daylight left the tomb through the false door to sit in the bright sunshine. The deceased was mourned by the sisters of Osiris, Isis, and Nephthys, who were equated with two black kites or kestrels whose screeching was likened to the wails of mourning women (Faulkner 1994: pl. 7).

Mummies were prepared on leonine biers. In the process of

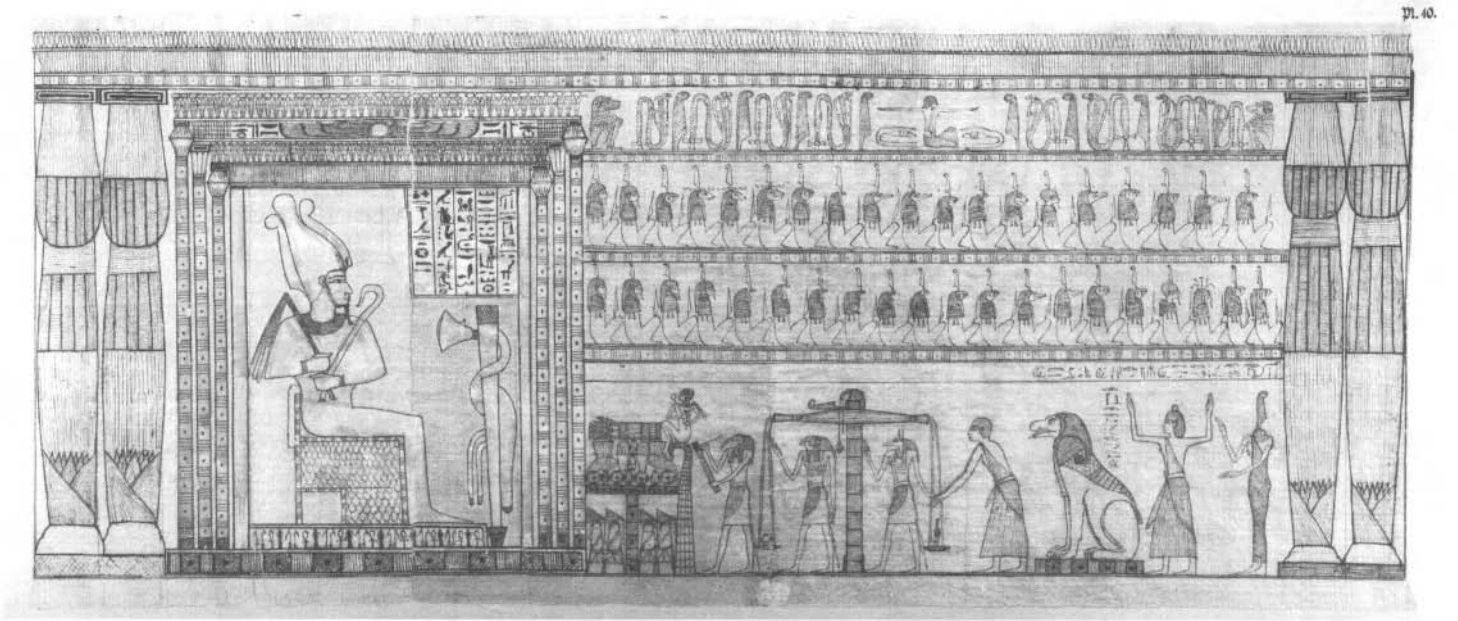

Fig. 12.2. Weighing the heart of the deceased. The jackal-headed Anubis and falcon-headed Horus stand beneath the scale, while ibis-headed Thoth records the judgment. Ammet, part-crocodile, lion, and falcon stands ready to consume the heart of the unjust. The tribunal of the gods with various animal heads sit in attendance in the middle registers. Papyrus Milbank. OIM 10486. Ptolemaic period, 4th–1st centuries B.C. Photo courtesy The Oriental Institute of the University of Chicago.

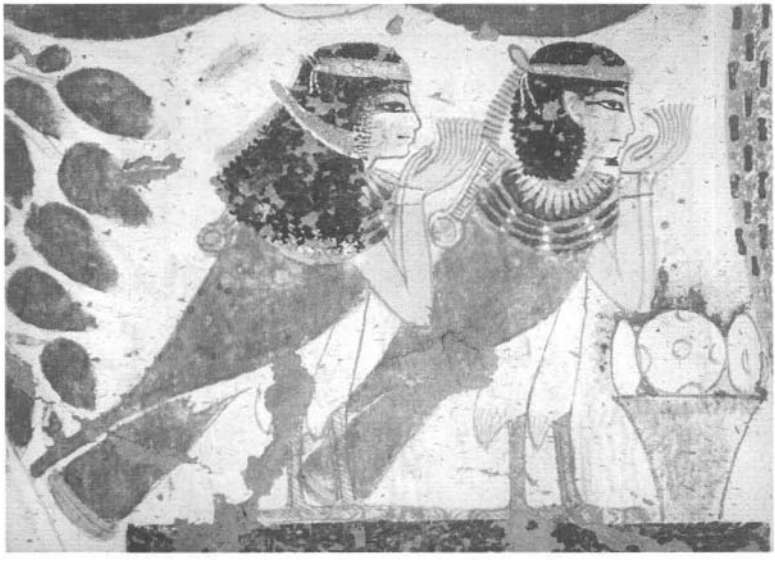

Fig. 12.3. The soul of the deceased and his wife in the form of human-headed birds (*ba*). Detail from a wall painting in the tomb of Userhat at Thebes. 19th dynasty, 1290 B.C. Photo courtesy of The Oriental Institute the University of Chicago.

mummification, the major organs were removed, separately mummified and stored in the tomb in four canopic jars, three of which from mid Dynasty 18 (ca. 1500 B.C.) onward had stoppers in the form of animal deities[6]: Hapi (a baboon), Qebehsenuef (a falcon), and Dwaumutef (a jackal). A protective scarab (the hieroglyph for "to come into being" or "to exist") of stone or faience was placed over the heart or in its place. The text on its underside (Book of the Dead Spell 30B) instructed the heart in the form of the scarab to not give damaging testimony to the god of judgment. Amulets in the form of the eye of the falcon god Horus or Re and figurines of animal-headed protective deities were arrayed in and around the mummy wrappings. The mummy of Tutankhamun was furnished with protective gold and inlay studded pectorals in the form of vultures, falcons and scarabs (Edwards 1976: nos. 23–24, 26–27).

The wings of the goddesses Isis, Nephthys and Maat were protectively spread around the body of the deceased, and from Dynas-

[6] The earliest example of animal stoppers for canopic jars were recovered from the tomb of Hatnofer, the mother of Senenmut (reign of Hatshepsut; see P. Dorman, "The Tomb of Ramose and Hatnofer," Metropolitan Museum of Art, forthcoming).

ty 17, the *rishi* (from the Arabic for feather) coffin evolved, decorated with the deity's feathered wings. The mummy was interred in the cemetery, which, at Thebes, was considered to be protected by the cow goddess Hathor who was the personification of the western mountains where the deceased dwelled.

ANIMALS IN THE RELIGIOUS CULT

Animals played a central role in religious cults in the form of sacrifices. The basic offering that was made to the deceased consisted of "bread, beer, oxen and fowl." This list of offerings is related innumerable times on tomb walls, stelae and statues. Representations of the preparation of offerings (both in relief and in three dimensional tomb models) indicate that the choicest part of the steer was the foreleg (which also was the hieroglyph *kepesh* "power"). Offering stands are also shown with the ribs and heads of cattle/oxen as well as the animal's heart. Tombs were stocked with actual food, some of which was mummified and encased in wooden coffins carved in the form of the animal part within to ensure that they would be eternally available for the soul of the deceased (fig. 12.4; Carter and Mace, 1923: pl. 18). By the New Kingdom, festival scenes in the colonnade hall at the Luxor Temple and elsewhere show elaborate bread or incense cakes that were modeled in imitation of cow heads (Epigraphic Survey 1994: 25 n. 76, pl. 62). Fowl offerings, specified

Fig. 12.4. Mummified, linen-wrapped waterfowl resting in its wooden case. OIM 18275, 18276. New Kingdom ca. 1000 B.C. Photo courtesy The Oriental Institute of the University of Chicago.

as geese and ducks, are shown with their necks rung, their unplucked carcasses draped over the offering stands.

The temples and funerary cults of Egypt required huge stocks of livestock for food and offering purposes. Animal offerings for the state-supported temples were raised in the temple livestock yards or obtained as spoils of war rather then being taken from the wild population. Ostracon Gardiner 86 from the reign of Ramesses II contains a census of the temple staff employed to care for the livestock of the domain of Amun. Although the number of herdsmen is lost, the ostracon relates that each cared for five hundred head of cattle. The same record lists 23,530 fowl-keepers who each oversaw 34,230 birds for a total of 771,201,900 (Kitchen 1999)! Reliefs at Medinet Habu record that Ramesses III brought back 3609 cattle as spoil from his Libyan war (Edgerton and Wilson 1936: 68). Decrees allowing herds of cattle to be moved from one location to another for grazing indicate that the stockyards that provided offerings for a single temple, such as Amun at Karnak, were scattered throughout Egypt. The fowl yards were probably not far afield from the temple in which the animals would be sacrificed. The southern shore of the sacred lake at the temple of Amun at Karnak has the remains of fowl yards, including a ramp that allowed the birds access to the water's surface (Berg 1987: 48–50).

A reference in Papyrus Jumilhac (Vandier 1961: 90) refers to the sacrifice of a "wolf"[7] and nine dogs, each of whom represented the enemy of the god. Each animal was characterized by its color, for example a white dog was associated with the enemy of Thoth, a red with Seth, and a black with Osiris.

Rituals that celebrated the annual visit of Hathor of Dendera to the temple of Horus at Edfu were accompanied by the ritual sacrifice of a red steer or bull that symbolized Seth. A priest representing Horus severed the foreleg to symbolize his victory over evil. The sacrifice was followed by releasing four birds that symbolically proclaimed the defeat of Seth, and by the ritual trampling of four fish (although it is not clear whether these were real fish or effigies; Alliot 1954: 520; Meeks and Faverd-Meeks 1996: 181). Reliefs from the time of Amunhotep III (ca. 1350 B.C.) attest to the ritual sacrifice of oryx (Derchain 1962). Texts from the Ptolemaic temples at Edfu and

[7] Referred to as a "wolf" in the literature, although the text must refer to some wolf-like creature for there are no wolves in Egypt.

Philae indicate that in that context, the animal was associated with Seth who represented the enemy of the eye of Horus (Derchain 1962: 26).

Animals were also employed in rituals that did not involve sacrifice. From Dynasty 5 through the Ptolemaic period, the king was portrayed in temples engaged in a ritual known as "driving the calves" (*ḥwt bḥsw*) (fig. 12.5; Egberts 1995). In this ritual the king imitated threshing with four cows, one spotted, one red, one black and one white. This was associated mythically with Osirian rituals of fertility and also with "treading the grave," commemorating Horus' search for the grave of his slain father Osiris (Egberts 1995: 357, 373–74).

Another ritual that employed live animals was associated with the festival of Min. Most fully recorded in the reliefs in the second court at the temple at Ramesses III at Medinet Habu (Epigraphic Survey 1940: pl. 205A; Murnane 1980: 38–39), the ritual celebrated the fertility of the god by imitating the cutting of grain followed by a procession of ancestral statues and a white bull, then releasing four birds[8] that served as emissaries to the cardinal points to announce the rejuvenation of Horus and the king (Murnane 1980: 38).

Egypt lacked the tradition of extispicy so characteristic of other cultures of the ancient Near East, and the foretelling of the future was accomplished mainly by oracles and human mediums. Rarely, the oracles consulted were in animal form such as a falcon statue (Kákosy 1982), and a ram from Kom el-Wist (Brunton 1947: 293–95). The Apis bull was supposed to be able to predict good or bad outcomes by its selection of stalls (Kákosy 1981: 144 n. 34; Meeks and Favard-Meeks 1996: 137–38), and it foretold the death of Germanicus by refusing offerings (Meeks and Favard-Meeks 1996: 137).

The bucolic scenes of fishing and fowling encountered in temples from the Old Kingdom throughout the Pharaonic period are also religious in nature. These compositions normally consist of the tomb owner standing in a boat in the marshes, throwstick raised in readiness to bring down the birds shown overhead (Decker and Herb 1994: pls. CCL–CCLXX). The man's wife and children are usually shown placidly at his feet. Such scenes are allegories for the victory of order

[8] According to Houlihan (personal communication), the birds at the Ramesseum (Ramesses II) are pintail ducks, while those at Medinet Habu (Ramesses III) are more like doves. See Keel (1977) for the identification as rollers.

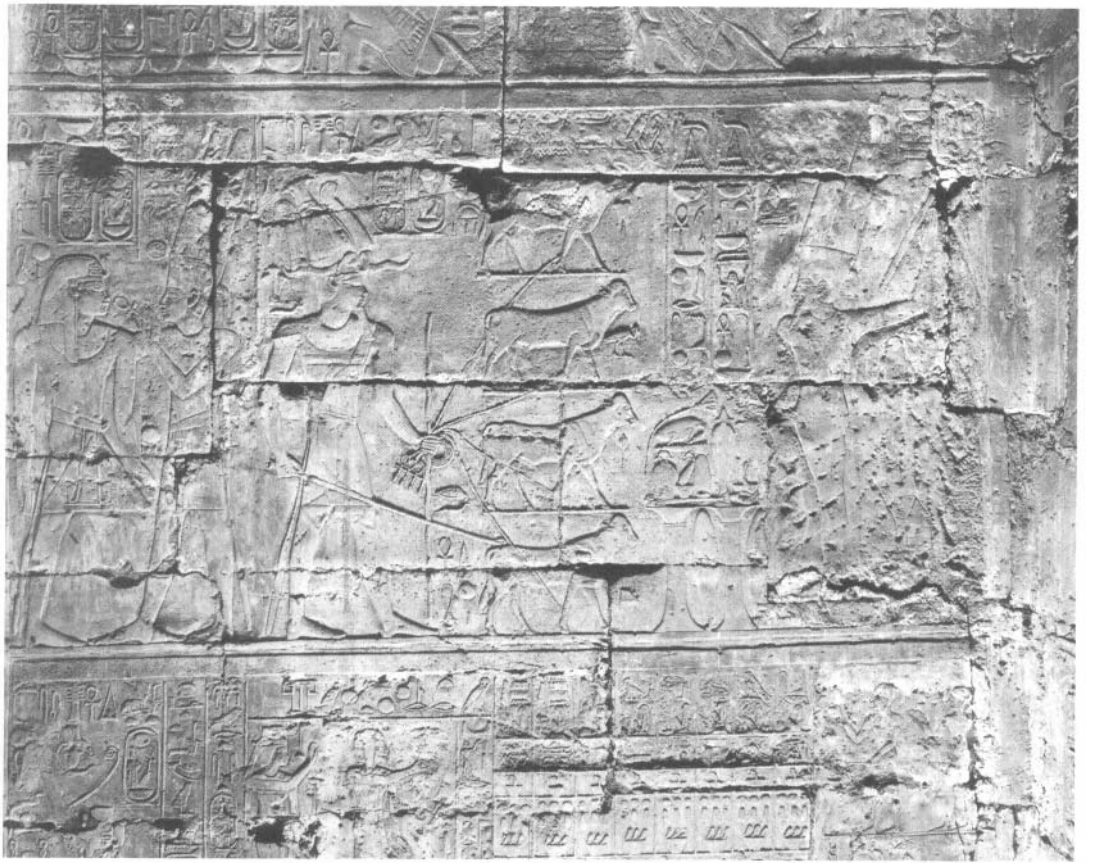

Fig. 12.5. Ritual of the "Driving of the Calves," in which the pharaoh herded four colored cows, symbolizing the search of Horus for the tomb of his slain father Osiris. Temple of Luxor, reign of Amunhotep III, ca. 1375 B.C. Photo courtesy The Oriental Institute of the University of Chicago.

over chaos for the wildness of the birds is emblematic of the forces of disorder, which can only be quelled by the power of order. The theme of controlling wild animals, thereby taming the forces of chaos, was employed by the king to demonstrate that he could safeguard his domains. These scenes, which were employed as a standard part of temple iconography from the Old Kingdom and employed into the Ptolemaic era, are typified by that on the south wing of the first pylon at Medinet Habu (Ramesses III), which shows the king charging into the marshes in pursuit of a wild bull (Epigraphic Survey 1932: pl. 117; Decker and Herb 1994: pl. CLXXXV). In a similar fashion, scenes of netting birds shown in tombs and also in temples throughout the pharaonic era are also allegories. There, the deceased or the king stands behind a blind, pulling a great clapnet closed around a group of birds (Decker and Herb 1994: pls. CCLXXI–CCC; Houlihan 1986: fig. 16). The wild birds symbolize disorder and the unpredictability of the universe while the action of mankind symbolizes the victory of order. In the royal scenes the allegory is more complex, for the birds may represent the people of Egypt and hence the scene symbolized the king's rule over his subjects.

ANIMALS AND MAGIC

Animals were frequently incorporated into the sphere of magic (for medical texts, see chapter 8). Among the earliest examples of animals associated with magic are the Middle Kingdom magical "wands," curved blades of ivory or bone that are incised with depictions of a variety of real and fantastic animals such as hippos, rams, cats, falcons, frogs, lions, winged griffins and double sphinxes as well as the deities Bes, Taweret and falcon-headed gods. The ends of some examples of wands are decorated with the image of a leopard and a fox (Pinch 1994: 40–44). Inscriptions that appear on some examples promise protection to the possessor, who is usually female: "We [the gods] have come to protect the lady ..." (Pinch 1994: 42). It has been suggested that the wands, which have been recovered mainly from tombs, are related to the protective knives that deities are shown holding in the underworld books, or that they are related to throwsticks that likewise are attributed protective powers. Others believe that the wands were used to trace a circle around vulnerable beings, probably children (Capel and Markoe 1996: 64).

Amulets in the form of a frog, the goddess Hekat who was associated with birth (the tadpole was the hieroglyph for 100,000), were worn as protection in childbirth and to promote fertility.

Images of crocodiles, snakes and scorpions were frequently employed for protective purposes against the sting of venomous animals. The best examples are magical steles (cippi) showing "Horus on the Crocodiles" triumphing over dangerous animals (fig. 12.6). In such compositions, which date from the New Kingdom to the second century A.D., the youthful Horus (indicated as such by his sidelock and nakedness) stands on the back of pacified and powerless crocodiles. He holds the tails of serpents, lions, scorpions and a gazelle, all symbols of wild realms, hence magically taming the forces of chaos. Cippi were used both to ward off and to cure the sting of venomous animals. Most cippi have a head of the protective god Bes and their entire surface is covered with scenes of the gods and with magical spells that call upon Isis, the mother of Horus, to cure and save the petitioner just as she rejuvenated her husband Osiris. Some cippi were equipped with basin-like bases. Water was poured over the magical spells incised on the statue, collected from the base and drunk as a cure.

Images of a god restraining wild animals were also employed in the stelae showing the god Shed who shares much of the same iconography with the youthful Horus. These stelae are simpler than the cippi, showing the god holding scorpions, snakes and an oryx. As with the cippi, the god may stand on the back of crocodiles.

Pantheistic deities were also employed for magical protection. Known best through bronze figurines and faience amulets of the Late period, the deity is often a bewildering combination of the god Bes, and a jackal, with long falcon tail (fig. 12.7; Pinch 1994: 40–43; Andrews 1994: 36–38). Some have a ram head, or have multiple heads and many wear the *atef* crown. Texts indicate that some of these composite animals represent the god "whose great and mysterious forms are hidden from men" (Andrews 1994: 38), hence these creatures combine the protective powers of several deities into an especially potent protector.

More humble uses of animal motifs for magical purposes are also attested. A fish-shaped protective pendent was worn by women. As related in Westcar Papyrus (Middle Kingdom, Andrews 1990: 109, figs. 156, 157), a pleasure outing of the king was disrupted when the fish pendent of one of his entourage fell into the water. Fish-shaped

Fig. 12.6. Horus on the Crocodiles (Cippus) showing the youthful Horus grasping inimical animals (lion, gazelle, serpents, scorpions) and standing upon crocodiles. The zoomorphic form of Horus, also standing on a crocodile and a snake, appears at either shoulder. The steatite statue is incised with magical protective spells. OIM 16881. 4th century B.C. Photo courtesy The Oriental Institute of the University of Chicago.

Fig. 12.7. Pantheistic deity with a jackal (front) and falcon (back) face, and human body with the tail of a falcon. He holds serpents and stands on crocodiles. A cobra and vulture emerge from his knees. Another serpent, its tail in mouth symbolizing the eternal cycle of the sun, encircles the upper surface of the base. OIM 11375. Bronze, Late period, ca. 4th century B.C. Photo courtesy The Oriental Institute of the University of Chicago.

amulets were employed as amuletic jewelry perhaps because the tilapia fish was mistakenly believed to give birth through its mouth and was therefore associated with rebirth (Houlihan 1996a: 132–33).

A magical text of the third century A.D. refers to the ritual sacrifice of a cat, which in the final gloss is referred to as a spell [suitable] "for every ritual purpose: A charm to restrain charioteers in a race, a charm for sending dreams, a binding love charm and a charm to cause separation and enmity" (Betz 1992: 22). In the course of the ritual, the conjurer invoked the deity Sekhmet-Bastet to protect the cat—the incarnation of the deity—from the evil that the practitioner enacted in the name of his enemy; "behold your form being mistreated by [your] opponent [personal name] so that you may revenge yourself upon them." The spell instructs the conjurer to drown the cat while speaking magical formulas. Three charms made of metal were inscribed with magical texts and images. These were placed in the anus, ears and upon the throat of the dead cat. The animal was then hidden in a tomb and the water in which it was drowned sprinkled near the enemy in order to draw the vengeful deity to the practitioner's prey. The whiskers of the cat were retained as charms that were thought to invoke the god Helios.[9]

ANIMAL CULTS

Animal cults, in which an animal representative of a god was venerated, were an important part of Egyptian religion, especially in the Third Intermediate and Late periods. According to Herodotus, the animal cults were so prevalent that "both wild and tame [animals]—are held to be sacred," and that "they have guardians appointed for them ... who are responsible for feeding them" (Herodotus II.65).

There were two forms of animal cults. The first involved the veneration of a living animal who, as the sole earthly incarnation of a god, was thought to be imbued with the *ba* (spirit) of that divinity. This type of animal cult is first attested by the Early Dynastic period cult of the Apis bull (Simpson 1957), the incarnation of Ptah or the *ba* of Osiris, and later of Serapis at Memphis. Other cults that focused on bulls include those dedicated to Buchis, the incarnation

[9] I thank Robert Ritner for bringing this text to my attention.

of Montu, and the Mnevis bull, the avatar of the sun god of Heliopolis. Each animal was selected on the basis of special markings, the Apis by a triangle on its forehead, an eagle-shape on its back, a scarab marking under its tongue and double hairs in its tail (Herodotus II.29; Diodorus I.85). According to Herodotus, the birth of the sacred animal was heralded by a flash of lighting over the mother of Apis. The Apis, Mnevis and Buchis bulls were each considered to be an emissary of their respective god and they were worshiped for the duration of the animal's natural lifetime. The greatest crime attributed to the Persian king Cambyses was his purported slaughter of the Apis,[10] an act that turned the Egyptians against the Persians, and was a sure portent of the doom of the foreign domination.

Once identified, the Apis bull was taken to its temple at Memphis where it lived in luxury attended by a staff of priests (Thompson 1988: 195–98). The death of the Apis was marked as a major chronological event within a king's reign (Kitchen 1986: 489), as was the selection of the next Apis. The funerary service for the Apis was extraordinary. The carcass was mummified in the temple at Memphis where the great lion-headed tables thought to be used for the embalming still stand. After the same elaborate process employed for humans (Thompson 1988: 198–203), the carcass was heaped with dry natron, then anointed, perfumed, purified and wrapped in pure linen, and finally conveyed to Sakkara where it was deposited in a mammoth wood, and later, hard stone sarcophagus. The tomb of the Apis initially was a free standing chapel with a burial chamber. In the reign of Ramesses II, the great catacomb at Sakkara (the Serapeum) was built as the final resting place of the Apis. This catacomb was later enlarged to accommodate burials dating to the end of the Ptolemaic period.

Another such animal cult is known from the Ptolemaic period at the temple of Horus at Edfu. There, the sacred personification of the god Horus was selected each year from a flock of falcons maintained by the temple priests. The selection was made by the oracle

[10] See Thompson (1988: 106 n. 3) for a brief bibliography regarding the veracity of this event. Darius provided 100 *talents* of gold to the one who discovered the new Apis (Thompson 1988: 192–93), making the charge against Cambyses even more improbable.

of Horus represented by a statue of the god (Alliot 1954; Meeks and Favard-Meeks 1996: 130–32). Once selected, the bird was crowned as an incarnation of the king and it was referred to as the "living image, the living falcon." During its "reign" the bird occupied an aviary in the temple. This residence was closely modeled on the royal temple with courtyards and a window of appearance from which it could be adored by the multitudes. Liturgies inscribed on the temple walls detail the offerings of flowers, gold jewelry, and food that were made to the falcon (Cauville 1984: 13: 72–73; Meeks and Favard Meeks 1996: 132–34). The is no information to suggest the fate of the falcon who was deposed by his "heir."

Herodotus refers to a crocodile cult in Thebes and the Fayum where "they keep one particular crocodile which they tame, putting rings made of glass or gold into its ears and bracelets round its front feet. In fact while these creatures are alive, they are treated with every kindness, and, when they die, embalm them and bury them in sacred tombs" (II.69). Several temples had specially designed pools for the sacred crocodile (Gessler-Löhr 1983: 481–88). Diodorus (1.84) recorded the cults of these living animal incarnations of the god, noting that "the details are easy enough to relate, [but] they will scarcely be believed by anyone who has not witnessed them."

In the second form of animal cult, the animals were bred as sacrificial animals to be used as votive offerings to the god with whom they were associated. This type of cult was far more common and widespread than that of the Apis or the living Horus. Such practices are attested from the Ramesside period to about the second century A.D. with their peak of popularity in the Ptolemaic period (fourth–first centuries B.C.). In this form of worship, a great variety of species of animals in the Nile Valley was mummified as a part of cult devotions.[11] Cat mummies were dedicated to Bastet; hawks to Horus and Re; ibis and baboons to Thoth; crocodiles to Sobek; dogs and domestic dogs[12] to Anubis. Even smaller animals—scarabs, ichneumon (mongeese), snakes, frogs, shrews—were raised by the staff of the temple and sacrificed to the god with whom the animal was associated. In the case of cats, the animals were killed at the ages of

[11] See Kessler (1986: 580–81) for a listing of animals mummified as part of cult devotions. See Houlihan (1986: 140) for a list of the birds that were mummified.

[12] Often referred to as jackals in the literature, but more correctly identified as domestic dogs (Houlihan, personal communication).

ten months and of two years of age, thereby culling their numbers while maintaining breeding stock (Armitage and Clutton-Brock 1981). The animals were mummified and wrapped. This process had many variations, from beautifully arranged mosaic-like patterned wrappings to the most coarse and careless procedures. Some animal mummy packets contain only part of the body (Filer and Andrews 1999), or a disarticulated body wrapped with sticks and rubbish. Some animals were placed in pottery or wood coffins, while small animals in the Late period were often enclosed in bronze box-like coffins (fig. 12.8). The coffins employed for cats were often feline-shaped containers of wood or bronze, now ironically mistaken by the museum-going public as tributes to the Egyptians' love for cats.

The animal mummies were purchased by pilgrims who might inscribe their name or a wish upon the wrapping or container, such as "may Thoth the great god give life to lady Tateharbeke ..." (Smith 1974: 45). The animal was donated to the temple where it was placed in the temple's catacomb as a symbol of devotion to the god. One baboon discovered in the catacombs at north Sakkara bore the inscription "Mestatatoumis" ("The Hearing Ear"; Smith 1974: 42) indicating that it may have functioned as an intercessor to funnel requests to the gods.

The mummification of votive animals was a very popular practice in the Late period and catacombs have been excavated in all parts of the country.[13] The sacred ibis catacomb at north Sakkara alone is estimated to hold four million birds (Ray 1976: 138). This again is at odds with Herodotus (II.66) who claims that "anyone who deliberately kills one of these animals is punished with death; should one be killed accidentally, the penalty is whatever the priests choose to imposed but for killing an ibis or a hawk, whether deliberately or not, the penalty is invariably death."

Biographical inscriptions of a priest named Hor who worked in the ibis catacombs indicate that the burials at North Sakkara took place several times a year, the bird mummies being put aside in preparation for their final ceremonial internment (Ray 1976: 140). However not all animals that were mummifed were considered to be sacred.

It has been suggested that a mummified horse and an ape discov-

[13] See Kessler (1986: 579–80) for a listing of the major animal necropolises.

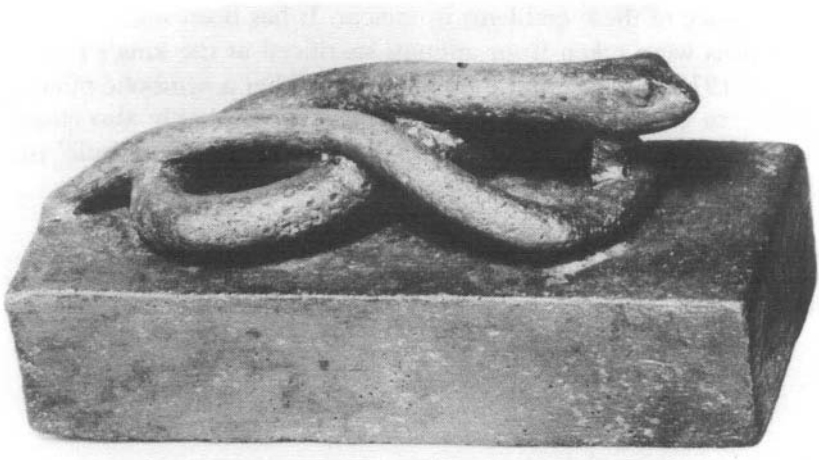

Fig. 12.8. Bronze coffin for a mummified snake. OIM 11189. Late period–Ptolemaic period, ca. 6th–1st centuries B.C. Photo courtesy The Oriental Institute of the University of Chicago.

ered near the lower tomb of Senemnut at Deir el-Bahari were pets buried near their master (Winlock 1947: 154; Boessneck 1970), a conclusion that is apparently based on the fact that the horse was not sacred to any deity (te Velde 1980: 81). Further, it was buried with a decorated linen saddle cloth (or blanket), which is unprecedented for a votive offering.[14] Neither animal was truly mummified, but simply wrapped in linen bandages. The horse was placed in a wooden coffin over seven feet in length.

Another form of animal sacrifice that may be related to votive animals is attested by bucrania made of clay with real horns that were placed on a bench-shaped structure of a First Dynasty tomb (no. 3504) at Sakkara (Emery 1972: 71, pls. 8–9). More than three hundred of these unique ornaments decorated the structure.[15] The

[14] In contrast to the lack of Egyptian rituals associated with horses, Nubians incorporated horses into burials at el Kurru (seventh century B.C.; D. Dunham 1950: 110–17), and horses, donkeys, camels and dogs into the royal tomb complexes at Ballana (fourth century A.D.) (Emery and Kirwan 1938: 26, pls. 9, 13 and pls. 55, 56 for horse trappings). See Williams (1991: 26) for a more recent analysis of the animal burials at Qustul.

[15] Real animal skulls are not uncommon elements of tombs of the Pan-Grave people of Egypt and Nubia (ca. 2200 B.C.). See, for example, the gazelle horns (at-

significance of these emblems is unclear. It has been suggested that the horns were taken from animals sacrificed at the king's funeral (Lauer 1976: 88) and that they thus were either a symbolic offering or a form of "magical protection." They are probably also closely related to the literary allusions of the king as a "strong bull" (see chapter 8).

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tached to the top of the cranium) painted with red and black stripes and dots that were recovered from cemetary K at Adindan (Williams 1983: 113, pl. 131).

CHAPTER THIRTEEN

ANIMALS IN ANCIENT MESOPOTAMIAN RELIGION

JoAnn Scurlock

Whether living or dead, real or imaginary, animals had an important part to play in ancient Mesopotamian religion. There were animalian spirits and spirited animals; living animals served as conduits of communication between men and gods. Like people, gods used animals, and, like people, they ate them. The relationship between men and gods was cemented by regular offerings and occasional sacrifices of animals prepared in specific ways in accordance with set rituals (see chapter 14). Finally, animals could be used as absorbing pads for evils that might otherwise have killed a person or at least caused him grief.

The following is intended as a broad survey of ancient Mesopotamian practices across the spectrum, not as an essay on the developments that must have occurred over the course of several millennia of history, nor as a comparative study of regional differences. For those interested in compiling such an essay or comparative study, the place and/or time period of examples cited are usually indicated.

ANIMALIAN SPIRITS AND SPIRITED ANIMALS

In ancient Mesopotamia, evil spirits were imagined as "mixed beings," human in strength but essentially animalian in character, that is to say in human form but with the hands and feet and especially the heads of animals. Demons and Netherworld figures are described in the dream vision of a Neo-Assyrian prince: "Alluḫappu had a lion's head, (his) four hands and feet were human. Sagḫulḫazû had the head of a bird, his wings were spread out and he flew here and there; (his) hands and feet were human ... The ghost had an ox's head, his four hands and feet were human. The evil Utukku had a lion's head, (his) hands and feet were those of Anzû. Šulak was a lion, standing constantly on his hind legs. The Curse had a goat's head,

(his) hands and feet were human. Nedu, chair bearer of the Netherworld, had a lion's head and human hands, his feet were those of a bird. Generic Evil (*mimma lemnu*) had two heads, one was the head of a lion, the other head ... Muḫra had three feet, the two front ones were those of a bird, the rear one was that of a bull" (Livingstone 1989: no. 32 rev. 4–8).[1]

The unfortunate Naram-Sîn had, according to the Kuthean legend, to deal with birdmen with bodies of shelducks and faces of ravens (Westenholz 1955: 308:31). Even less attractive was the child-snatching demonness Lamaštu who had the face of a bitch, donkey ears and teeth, the feet of a bird, and a personality to match (see Farber 1983: 439–46; Scurlock 1991: 155–59). Plaques also show her riding on a donkey, suckling a dog and a pig, and grasping snakes in both hands (see e.g., Parpola 1993: 230).

Some ordinarily encountered animals also acquired quasidemonic overtones. A Neo-Assyrian NAM.BÚR.BI (apotropaic ritual to avert bad omens; see Maul 1994) describes a scorpion: "Wolf of the bedroom, lion of the storeroom. Its horns are pointed like those of a wild bull; its tail is turned back like that of a mighty lion" (Maul 1994: §VIII.8:8'–10').[2] An Old Babylonian incantation paints a chilling portrait of a rabid dog. "He is long of leg, quick at running. He is short of sustenance, poor in food. His semen is suspended from his teeth; wherever he bites, he leaves behind his child" (Whiting 1985: 182:1–9).

Learned speculation had it that certain wild animals had arisen from the death of gods. "The wild ass is the ghost of Illil; the wolf is the ghost of Anu. Bel made him roam the plain. The gazelles are his daughters. Bel made them roam the plain. The dromedary is the ghost of Tiamat. Bel cut off her horns, clove her [feet] and docked her tail. Bel bound her and showed her to mankind that this not be forgotten. Her name is *Tamriqātu*, which the folk take to mean "he learned from my example" (*ētamar qātāya*; Livingstone 1989: no. 39 rev. 11–16).

Ancient Mesopotamian gods were generally anthropomorphic, with the notable exception of Niraḫ ("little snake"), minister to Ištaran of Der, whose nether regions, at least, seem to have taken the

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I would like to thank the following persons who read and commented on earlier drafts of this chapter: R. Beal, M. Hilgert, R. Jas and M. Murrin.

[1] For more details on such creatures, see Wiggermann (1996).

[2] While this was being recited, the offending scorpion was incinerated (ll. 2'–7').

form of a snake (see, e.g., Black and Green 1992: 166). The goddess Nintu was also somewhat snakelike, to judge from a Neo-Assyrian cult inventory. "The head (has) a turban with horns in front. She has hair on the nape of her neck; she has curls(?); she has wiry hair. Her hands are human. She is girdled with a loincloth; her chest is bare. She carries an infant in her left (hand) and it eats from her breast; with her right she makes a sign of blessing. From her head to her loincloth, the body is that of a naked woman. From her loincloth to her club foot, she is covered with scales like a snake. Her belly has wavy lines drawn on it" (Köcher 1953: 70/72 iii 38'–50'). Being part animal was, however, no bar to goodness. The largest of a host of ancient Mesopotamian friendly mixed beings were the *šēdū*, winged bulls with human heads whose representations, weighing several tons, silently guarded the gates of royal Assyrian palaces. Others included the bull-man (*kusarikku*), the scorpion-man and scorpion-woman, the lion-man, the fish-man and fish-woman, and the winged, bird-headed sage (*apkallu*; see Wiggermann and Green 1994: 222–64).

Ancient cult inventories record other mixed beings whose representations have, for the most part, not come down to us (for a textual description see Köcher 1953: 57–107). "The head is that of a dog/lion with his mouth open; his hands are human. With his right (hand), he makes a sign of blessing; [in] his left, he carries a table. He has wings (and) is girt with a loincloth. From his neck to his loincloth, he is human; from his loincloth to his feet, a dog/lion. He has the claws of a bird (and) the tail of a dog/lion" (Köcher 1953: 78 v 43–50). "The head has a turban; the snout is that of an ape. One horn like that of a gazelle is pointed towards her back; one horn like that of a gazelle is curved towards her front. The ears are those of a sheep; the hands are human. In both (hands) she carries a piece of bread and holds it to her mouth. Her body is that of a fish. She bends towards her back (and) is set on a club foot. The hair falls from between her horns onto her back (and) is tangled with her club foot. From her middle to her club foot she ... The sockle on which she stands has wavy lines drawn on it. She is clothed in scales like a carp" (Köcher 1953: 72/74 iv 5–19). Equally curious is one who had a sheep's head, long curly locks and the front feet of a dog/lion (see Biggs 1996: no. 134).

The assistance of such friendly mixed beings could be secured either by placing carvings of them at the doorway, or by the simple

expedient of burying their figurines under the floor of a room either under the threshold, in the corners or round the bed where demons were known to lurk (see, for example, Gurney 1935: 64–75; Parpola 1993: no. 263; von Weiher 1988: no. 69). "In the door of that *šaḫūru*-building, four bull-men, sons of Šamaš, of glittering bronze carrying the sun above in their hands supported the roof. Below, at their feet, firmly planted on two pedestals of bronze, were four bronze fish-men (and) four bronze goat-fish. To the right and left of the door, a mad lion and a scorpion-man held the lock bar for their doors" (Börker-Klähn 1980: 271:17–21).

Being part animal themselves, mixed beings were the perfect choice to ward off real animals or demons in the form of animals. Thus, for example, the lion-man (*urmaḫlullû*) was sometimes buried near the entrance to lavatories to ward off the leonine *rābiṣu*-demon of the toilet, Šulak (Wiggerman 1992: 98; see also Black and Green 1992: 119 for a mislabeled illustration). Live dogs guarded doorways in ancient Mesopotamia as elsewhere, but double protection could be had by burying miniature figurines of dogs in different colors inscribed with such instructions as "Don't think it over, open your mouth!" and "Don't think it over, bite!" (Gurney 1935: 72 rev. 17–22; Wiggerman 1992: 14:191–205).[3] Such dogs, coated with real black dog hair on the body and a tail made from the hair of a virgin she-goat, were thought to be particularly effective against the demonness Lamaštu (LKU 33 rev. 21–35).[4]

ANIMALS AS CONDUITS OF COMMUNICATION BETWEEN MEN AND GODS

The most prestigious and reliable form of divining the future was to ask the gods' advice via divinatory sacrifice. However, it was hardly necessary to kill an animal to draw an omen from it. One class of omens, known as "If a City (is Situated on an Elevation)" (*šumma ālu*) draws its predictions from chance occurrences, many of which involve animals. These texts are an interesting example of the live-

[3] A set of such dogs were actually found in the north palace of Assurbanipal. For an illustration, see Parpola (1993: 197); for further references, see Mallowan (1986: 149–52).

[4] For the use of astral magic to render such figurines more effective, see Reiner (1986: 35–36).

ly interest ancient Mesopotamians took in the peculiarities of animal behavior:[5]

1) "If a scorpion (or mongoose) kills a snake in a man's house ..."[6]
2) "If in a man's house a snake continually circles round and hisses ..." (KAR 386:52).[7]
3) "If a dove makes a nest in a man's house and a snake eats her young and she moans ..." (von Weiher 1983: no. 32 rev. 12).
4) "If a line of red (or) brown ants is seen in a man's house ..." (KAR 376:19).
5) "If red ants make a battle in a man's house and one kills another ..." (KAR 376:18).
6) "If a roof rodent takes a lamp up onto the rafters ..." (CT 39 36 [K 10423+]:10// CT 37 39:19).
7) "If a horse runs of its own accord into the house of an important person and breaks a chair ...."
8) "If a donkey becomes rabid and kills its young ..." (CT 40 33:10).[8]
9) "If a dog lies on his (master's) bed ...."
10) "If a falcon eats a bird on the roof of a man's house ...."
11) "If a goat eats a man's garment ..." (von Weiher 1988: no. 97:7).
12) "If a pig eats a man's shoe ..." (von Weiher 1988: no. 97:33; CT 39 39:2).

Another class of omens (*šumma izbu*: "if an anomaly") was taken from malformed births of human beings, but more usually of domestic animals (Leichty 1970). "If an anomaly's (only) horn protrudes from its head ...." "If the anomalies are double, and they have only one

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[5] If *CAD* I/J 207b's interpretation of LKA 103:5–6 is correct, a Mesopotamian patient could be expected to be able to reproduce the mating calls of stags and shelducks.

[6] Unless otherwise cited, translations are drawn from Saggs (1962: 308–10), which has a nice selection of such omens. For other observations on the behavior of scorpions and mongeese from the same series, see *CAD* Š/2: 434 s.v. *šikkû* mng. 1a and *CAD* Z: 164–65 s.v. *zuqaqīpu* mng. 1c.

[7] For other examples of snake behavior drawn from the same series, see *CAD* Ṣ: 149a s.v. *ṣēru* mng. 1b.

[8] Similarly, "if a horse becomes rabid and bites either its companion or people" (CT 40 34 rev. 8). For other references, see *CAD* N/2 55a s.v. *našāku* mng. 3 and *CAD* Š/2 260 s.v. *šegû*.

head and two s[pines], and two tails, but only one belly ..." (Hunger 1992: no. 239:6; no. 240:1–2). Where the omen was a bad one, its ominous consequences could be averted by dumping the malformed birth, along with travel provisions and a few nice presents, into a duly alerted river (Maul 1994: § VIII.7). The kings of Mari took a particular interest in *izbus*; one letter records the case of a malformed birth that occurred among some rather ordinary folks' flocks but that was brought to the governor for inspection after which the doubtless by now rather olfactory curiosity was sent on to the king for his personal examination (Guichard 1997: 306).

Šumma ālu and *šumma izbu* are collections of unsolicited omens—spontaneous messages from the gods to warn humans of impending danger. If humans wished to know the future at their own convenience, or if it was a matter of checking an unsolicited omen to make sure that it was accurate, it was necessary to turn to some form of solicited omen.

Of these, some, namely smoke, oil and stone omens and incubated dreams (Reiner 1960: 20–35; Finkel 1995: 271–76), did not involve animals, while others managed to use animals without actually requiring their slaughter. "On a favorable day, you measure out (a place). You take a ... *laḫannu*-vessel. A virgin boy draws water from the river (with it). You scatter juniper and *maṣḫatu*-flour on a censer before the gods of the night. You pour out a libation of beer. You raise up that water and recite three times: '[I] have appealed to you ... during this night, I shall let pure spring water fall onto the forehead of an ox; let me see your true judgment and the decision of your great godship, so that I may make a prognosis. Let the ox give a sign whether NN son of NN will achieve his desire.' (If) you pour (the water) three times onto the forehead of a recumbent ox, you will see a sign. If the ox moans and gets up, he will achieve his desire; if the ox moans and does not get up, he will not achieve his desire ... If the ox grinds his teeth and gets up, he will achieve his desire ... If the ox gets up and kicks up dust behind him with his forefeet, he will not achieve his desire" (Reiner 1960: 35:110, 115–23, 126, 138).

If real animals could be used by gods to communicate with men, representations of animals could be used to signal desired outcomes from the spirit world. A typical animalian charm is the ubiquitous representation of a cow suckling a calf (Barnett 1957: 143–45). On

these, the calf suckles in one direction, while the cow turns to lick it in the opposite direction, thus forming a magic circle of protection and motherly concern.[9] (Similar motifs are common in modern India where they are explained by reference to one of the numerous legends surrounding the child-god Krishna.) A clay figurine of a bull made from dust taken from public places and from the establishment of a successful beer merchant could, if buried under the vat, ensure profits (Zimmern 1918/19: 174/176: 61–73).

A cow also features in a curious historiola attached to a childbirth ritual. "One cow of Sîn, 'Maid of Sîn' (was) her name, she was richly adorned; she was luxuriant in shape. Sîn saw her and loved her. He put the shining of ... Sîn on her. He had her take the lead of the herd, going as herdsman after her. They pastured her on grass among the juiciest grasses; they gave her water to drink in the most satisfying of watering places. Concealed from the herd boy, without the herdsman seeing, a vigorous fat (bull) mounted the cow; he reared up (over) her tail(?). At the coming to an end of her days (and) the completion of her months, the cow became frightened; it frightened her herdsman. His face was downcast; all the herd boys mourned with him. At her bellowing; at her cries in labor, he threw himself to the ground. In heaven, the moon-crescent, Sîn, heard her cry. He raised his hand towards heaven. Two protective divinities came down from heaven and one of them was carrying oil in a *pūru*-vessel. The other one brought down the water of giving birth. They smeared oil from a *pūru*-vessel onto her forehead. They sprinkled the water of giving birth over her whole body. A second time, they smeared oil from a *pūru*-vessel onto her forehead (and) sprinkled the water of giving birth over her whole body. While (they were) smearing it on a third time, the calf fell on the ground like a young gazelle. He/she made his name "Suckling Calf." Just as "Maid of Sîn" gave birth straightaway, so may the adolescent who is having difficulty give birth. May the midwife not be kept waiting; may the pregnant woman be all right."[10]

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[9] "Like a cow keeping an eye upon her calf, he (Gudea) went around the house in constant worry" (Edzard 1997: 81 xix 24–25).

[10] BAM 248 iii 10–35; cf. Lambert (1965: 285/286:20–36), Lambert (1969: 31:53–61), *KUB* 4.13:6–12. See Veldhuis (1991) and Scurlock (1991: 147–48).

GODS' ANIMALS

In Neo-Assyrian rock reliefs such as those carved into a cliff face at Maltai, the gods are depicted standing on the backs of animals.[11] The most picturesque of these divine mounts[12] were doubtless the *mušḫuššu*-dragon of Marduk, the lion-headed Anzû-bird of Ninurta, the centaur of Pabilsag and the goat-fish (*suḫurmāšu*) of Ea (whence our zodiacal signs of Sagittarius and Capricorn). More prosaic were the scorpion of Išḫara, the crested bird of Nusku,[13] the bull of Adad, the horse of Šamaš, and the lion of the goddess Ištar, seven of which were harnessed to her chariot (Langdon 1912: 274 iii 11–15, 276 iii 31–33).[14] A few demons also kept pets; Lamaštu's mount was a donkey (see e.g., Green 1995: 3:1844).

Some of these animals are unique to a particular god, but it is a common pattern for gods or goddesses of a similar type to be depicted with the same animal mount; conversely, where there were many possibilities to choose from, as with birds, a god or goddess could conceivably claim more than one as "his." In some cases, the choice of a characteristic animal seems obvious; it is, for example, readily apparent why red ants should have been considered the "messengers" of the queen of the Netherworld, Ereškigal (Maul 1994: § VIII.9:6, 9). In other cases, as with Anzû and Ninurta, a legend was needed to explain the relationship.[15]

Most subtle was the assignment of birds. Like the legendary bells of Wales that are supposed to sing out messages unfavorable to mine owners, the differing songs of birds were, to the initiated, short messages in human language. "The falcon is the bird of Marduk; it continually cries: "Šazu," the one who knows (ZU) the heart (ŠÀ) of the gods, who looks into (men's) minds" (Lambert 1970: 114:16).[16] Rather ungraciously, the *asakku*-demon's bird, said "*ṣiasag ṣiasag*," "Go

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[11] For details, see Reade (1988/89: 320–22). The Bavian reliefs (Jacobsen and Lloyd 1935: 44–49: pls. 33–34) show a similar scene.

[12] For more information on gods' animals and symbols, see Braun-Holzinger (1996), and Green (1995).

[13] See *CAD* I/J 207a s.v. *iṣṣūr ḫāṣibaru*. This is mentioned in connection with omens drawn from the behavior of birds; for the birds of Anu, Sîn, Ištar and Gula, see *CAD* I/J 208a s.v. *iṣṣūr kezrēti* and 212b s.v. *iṣṣūru* mng. 1d.

[14] For a fine illustration of the goddess standing on her beast accompanied by her date palm and ibexes, see Livingstone (1989: 19).

[15] For a recent translation of the myth of Ninurta and Anzû, see Dalley (1991: 203–27).

[16] The epithet is quoted from *Enūma eliš* vii 35.

away (*si*), Asag; Go away, Asag," and Enmešarra's "*taḫtaṭanatutu,*" "You did wrong to Tutu" (Lambert 1970: 114:17, 112:2).[17]

The ordinary dog on garbage disposal detail was about as welcome in a temple as the proverbial bull in a china shop. "If a dog enters the house of a god, the gods will not have mercy on the land" (*Racc.* 36 rev. 3). The dog of Gula, goddess of healing was, however, a special case. Stray dogs may have been entitled to burial in her shrine; alternatively, dogs used as surrogates in the manner of the kid goat for Ereškigal (see below) may have been deposited there. In any case remains of some thirty-three dogs have been discovered so far in Gula's "dog temple" at Isin (Livingstone 1988: 54–60, with bibliography).

A human worshiper wishing to please a divinity could do worse than to present her/him with a figurine, in clay or precious metals, of her/his characteristic animal. The Old Babylonian temple of Gula at Isin was found to contain whole rooms full of clay dog figurines, and the Neo-Babylonian king Nebuchadnezzar II placed gold, silver, and bronze dogs in the foundations of the gates of the Gula temple at Babylon (Langdon 1912: 164 B vi 20–24). The Neo-Assyrian king Sennacherib mentions that "to Ea, king of the sweet waters, I offered pure sacrifices and threw (them) along with a ship of gold, a fish of gold (and) a crab of gold into the midst of the sea" (Luckenbill 1924: 74/75: 79–80). On a much grander scale: "I decorated the boat of Marduk with spades and *mušḫuššu*-dragons (using) fourteen talents (and) twelve minas of shining gold" (PBS 15 79 ii 22; for other references to representations of Marduk's dragon, see *CAD* M/2: 270–71 s.v. *mušḫuššu* mng. d).

The goddess Ištar seems to have been amused by impersonations of her lions. Her *kurgarrus* and *assinnus* had a full time job amusing this grim mistress of liminality by making a lot of noise on various instruments, donning masks, singing of warfare, dressing up as women, and dancing sword dances (references in *CAD* A/2: 341–42 and *CAD* K 557–59; cf. Groneberg 1997: 291–303). On a number of Assyrian reliefs, they are also shown with their characteristic whips and holding their hands to their mouths, presumably so as to emit one of their various noises, wearing feminine unbelted fringed

[17] Note also: "the wasp of the lord whose *kiṣlu* became the raven (i.e. Anu) is the ghost of Enmešarra, (which) keeps crying: Burn me!, Burn me!" (Livingstone 1989: no. 39 rev. 9–10).

tunics,[18] dressed in skins of lions and dancing to the accompaniment of flutes or stringed instruments.[19]

Gods possessed herds of earthly animals, branded with the god's characteristic mark: for example, the star for Ištar; sun disk for Šamaš; crescent for Sîn; spade for Marduk. These herds were used to plough the god's fields, to supply the god's table, and to transport the deity when he went out. The god Aššur, for example, was particularly fond of white horses,[20] several of which were used to pull his chariot to the *akītu*-house for the New Years' festival (for details, see van Driel 1969: 163–64). The steeds of Šamaš of Sippar were pampered beasts indeed; the combs and razors used for grooming them, the goads used to keep them on track, the vessels from which they drank water, and even the sickles used to cut their fodder were made of gold or silver (Pinches 1928: 132:5, 8, 10, 15, 16). Marduk insisted on choosing his horses himself; the diviner presented bits of the candidates' mane and tail to the gods along with the divinatory sheep, then checked the exta for his answer.[21] While he was at it, he asked the horse to put in a good word for him with the god, whispering his request into the horse's left ear, and punctuating it with a sacrifice offered to the horse "as if he were a god" (KAR 218 obv.! 10–rev. 11). It was a fairly obvious bad omen if one of these horses whinnied(?)/balked(?), especially if the divine chariot was broken in the process.[22] A bull was ridden in a curious procession, reminiscent of Palm Sunday, which was performed in Kislimu in honor of the god Nergal (Çağırgan and Lambert 1991–93: 93–106).

Like human kings, gods could appreciate the excitement of the hunt. Fresh from his marriage bed, where he had spent the past five days in dalliance with Tašmetu, the god Nabû came out on the

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[18] See Madhloom (1970: pl. 53), comparing nos. 1–2 (the costumed men) to no. 5 (a woman) and nos. 4, 7–8 (men).

[19] For the tentative identification of these figures with Ištar's cult functionaries, see Ellis (1977: 67–78). For the argument that these dancers are impersonating Latarak, see Wiggermann and Green (1994: 242).

[20] A number of neo-Assyrian legal texts require those violating an agreement to harness two white horses at the feet of the god Aššur. See, for example, Kwasman and Parpola (1991: no. 308 rev. 2). The god Sîn of Harran had similar taste in horses; see Kwasman and Parpola (1991: no. 98 rev. 3–4).

[21] KAR 218 obv! 1–9, see *CAD* S 331a. The oxen intended to draw the plow in the Sumerian *gusisu*-festival seem similarly to have been chosen by divination (M.E. Cohen 1993: 91).

[22] Pongratz-Leisten (1994: 262: C 91) reads *is-si-ma* ("whinnied"). Others, including also now *CAD* S 69 s.v. *sakālu* B mng. a, read *is-kil-ma* ("balked").

eleventh of Ayyaru to "loosen up his feet." He was taken to the royal park, where he killed wild bulls.[23] (The letter that refers to these events unfortunately does not explain how the god was supposed to do this; the easiest solution would have been to let the god or his standard ride in the chariot while the king did the actual hunting).

ANIMAL RECIPIENTS, CARRIERS, AND SUBSTITUTES

Perhaps the most common use of animals in religion, apart from sacrifice (for which see chapter 14), was as absorbing pads for evil. In a few cases, the animal seems actually to have been intended as the ultimate recipient of the problem. Ancient Mesopotamian sorcerers were notorious for feeding figurines of their victim to a dog, a pig, or even a bird or fish in order to destroy him.[24] Fighting fire with fire, so to speak: "(You take) two pieces of bread. You make one figurine each of sorcerer and sorceress of dough and you fasten them onto the bread and he (the patient) carries (one of them) in his right (hand) and (one in) his left and recites the recitation and you give (them) to a dog and a bitch."[25]

The evil of birds gathering over a person could by similar means be given right back to the birds. "You capture a male and female shelduck. You pour flour into well water. You rub off the body of the person (with it). You f[eed it] to those birds. The person carries those birds in his hands, the male in his right hand, the female in his left" (Maul 1994: §VIII.1.2:63–66). A recitation follows, after which the male bird is released to the east and the female to the west (Maul 1994: §VIII.1.2:81–82).[26]

Perhaps less satisfactory from the recipient animal's point of view was an apotropaic ritual for squeaky roof beams. "You take powdered bits from all of the roof beams. You catch a live fish in the river. You fill the mouth of the fish with the powdered bits from all the roof beams and you recite this recitation over the fish. You release it still alive into the river" (Maul 1994: §VIII.12:7'–10'). Doubtless

[23] ABL 366:13–rev. 4; see Matsushima (1987: 138–39); cf. M.E. Cohen (1993: 312).

[24] See, for example, Lambert (1957/58: 291/292:22–25), and PBS 1/1 13:19–23.

[25] This example is drawn from the anti-witchcraft series *Maqlû* "ritual burning" (Maqlû IX 184–87).

[26] Note also the neo-Assyrian ritual of the *bīt rimki*, where the king releases two captured birds to east and west after having sprinkled them with oil and fed them (von Weiher 1983: no. 12 iii 15–20).

the fish was not amused, but he had less reason to complain than the roof beams, into whose mouths cedar pegs were hammered to shut them up (Maul 1994: §VIII.12:11'–12').

A slaughtered animal was a particularly good absorbing pad for anger. A woman who had quarreled with her husband could bring him round to talking with her again by touching the death wound of a sheep while holding a magnet in her right hand and an iron boat in the left and reciting the appropriate prayer to the goddess Ištar (Scheil 1921: 26 iv 7–10). This done, the formerly wrathful husband would find her magnetically attractive, his anger as dead and gone as the poor sheep.

More frequently, the animal was simply a carrier designed to get the evil wherever it was going (usually the Netherworld) either directly, by killing and burying it, or indirectly, by putting it into somebody else's grave, leaving it out in some wasteland, or throwing it into a nearby river. One way of getting the evil into the carrier was to have the patient handle it. Interesting because of the obvious comparison with the ceremony of laying hands on the biblical scapegoat and then taking it out into the desert (Lev 16:20–22),[27] is the custom, attested in the *bīt rimki* ("bath house") ritual, of having the king station a variety of prisoners, human and otherwise, to his right and left and then release them as a means of ridding himself of his misdeeds. "The prince makes seven prisoners (i.e. convicts) sit to the right and seven to the left before Šamaš and says as follows: 'I have remitted their misdeeds ... I will release a bound sheep before you.[28] Just as I release this sheep, so may any evil misdeed, crime, offense or omission which is in my body be released before your godship' ... He captures two birds ... The king releases them to east and west and the king says [the recitation: 'I have remitted their misdeeds.' The seven and seven prisoners that were held to the right and left of the king he releases. When he exits from the *bīt rimki*, he strikes a gazelle with a throw-stick (*tilpanû*) and recites ..." (von Weiher 1983: no. 12 ii 20–21, 31–33, iii 15, 20–24; cf. von Weiher 1988: no. 68 i 1–16). The Akkadian word for ga-

[27] Note also the routine laying of hands on the sacrifice (Lev 1:4; 3:2, 8, 13; 4:4, 15, 24, 29, 33), an act that ensured the transfer of problems, sins, etc. to the sanctuary, hence the need for an annual purification in the Ritual of Atonement.

[28] A bound sheep is listed in an inventory presumably, to judge from the appearance also of a gazelle, chicken/goose, duck, pairs of birds and a live fish, for the performance of this very ritual (von Weiher 1993: no. 128:75–77).

zelle is *ṣabītu*, a pun on *ṣabātu*, "to seize" as in the prisoners or "to capture" as in the birds. Here too, a prisoner has, so to speak, been allowed to escape. "He releases a fish and recites ... He releases a chicken/goose and recites ... He releases a duck and recites ..." (von Weiher 1983: no. 12 iii 24–27).

Handling a live animal was also a good way of ridding oneself of the evil portended by that animal's behavior. "(If) a strange bird is seen in a man's house ... He carries the bird and enters a dead person's grave and puts that bird with the corpse and does not look behind him." To look back would be to allow the evil to return to the place from which it had been transferred (Maul 1994: §VIII.1.3:1, 48–50).[29] If the ominous animal itself was nowhere to be found, a clay figurine of the appropriate shape could be substituted (as in Maul 1994: §VIII.1.2.41, §VIII.1.3:10, 19, §VIII.1.4:3, 8, §VIII.3:4'–5', §VIII.4:3, §VIII.5:13–14, §VIII.6.2:6).

Alternatively, the evil could be transferred to a carrier using the patient's spit as a conduit. "He catches a green frog in the water. On the same day that he captured it, in his bed, in the morning before he puts his foot on the ground, you ru[b him] from head to foot and you (sic.) say as follows: 'Frog, you know the "grain" that seized me, [but I do not know it]. Frog, [you know] the *li'bu* that seized me [but I do not know it]. When you (try to) hop off and return to your waters, you will return [the evil to] its steppe.' You have [him] say this three times [and] three times he spits into its mouth. You take it to the steppe and you tie its foot with a band of red and white wool [and you fas]ten it to a *baltu* [or *āšagu*-thorn]."[30]

Bad luck could be averted in similar fashion by a timely ritual on the first day of Nisannu. At this time of year, various calendric rites were performed in connection with Marduk's *akītu*-festival. "The king goes to the spring. He makes a sacrifice. He causes the blood to be

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[29] Note also Maul (1994: § VIII.2), where snakes caught copulating in a man's house are lifted up before the gods, then put on a dungcake and sprinkled with water.

[30] BIL.ZA.ZA SIG$_7$ *ina* A.<(MEŠ)> DIB-*bat ina* U$_4$-*um iṣ-ṣab-tu-šú i*[(-*na še-rim*)] *la-am* GÌR^{II}-*šú ana* KI GAR-*nu* TA SAG.[(DU)]-*šú* EN GÌR^{II}-*šú tu-maš*-[*šá-a-šú*] *ù ki-a-am ta-qab-bi* BIL.ZA.ZA *še-um šá ṣa-ab-tan-an-ni at-ta* ZU-[*ú ana-ku* NU ZU(-*ú*)] BIL.ZA.ZA *li-'-bu šá ṣab-tan-ni* [...] *un-du at-ta taṭ-pi-du-ma a-na* A.MEŠ-*ka* GUR[-*ra* ...] *na-mi-šú tu-tar-ra* 3-*šú tu-šaq-ba*-[*šú-ma*] 3-*šú* ÚḪ-*su ana* KA-*šú* ŠUB *ana* EDIN TI-*qí-šu-ma ina* D[UR SÍG.ḪÉ.M]E.DA SÍG BABBAR GÌR-*šú tara-kas*-[*ma*] KI ^{GIŠ}DÌḪ *tara-kas* [KI $^{GIŠ.Ú}$GÍR *tara*]-*kas* (AMT 53/7 + K 6732:2–9//K 2581:21'–24'). I would like to thank the trustees of the British Museum for permission to quote from this unpublished material. For another ritual involving a frog, see Caplice (1971: 175 no. 69:11–13).

accepted into the spring. He puts a fish (and) a crab into the spring. He pours oil, honey (and) wine into the spring. He passes the purifying (censer). He is seen (by the people)" (Menzel 1981: T 76/77 i 8–13). In anticipation of this "rite of the spring," Neo-Assyrian householders in the know released birds and spat on fish. "You [go] to the house of a fo[wler and] present two doves, a male and a female to Šamaš ... (saying) 'Šamaš, you are the judge of heaven and earth ... make god and goddess, [ki]ng, notable and prince relent (*paṭāru*)!' You release (*paṭāru*) [the male to the] east (and) the female to the west. [You] massage [a fish] and spit on the fish, (saying) 'Fish, carry off my sin; take it down to the abyss!'" (Hunger 1992: no. 38:6–12 restored from no. 231:3–6 and BAM 318 iv 13–21).

According to a Neo-Assyrian cultic commentary, the king's rite at the spring was intended to commemorate Marduk's defeat of Ellil (Livingstone 1989: no. 37:3–4). Given this context, these seasonal celebrations presented a wonderful opportunity for the ordinary man on the street to send his troubles to the Anunnaki along with Ellil's fish.[31]

Perhaps the most ingenious use of an animal to draw off evil is that evidenced in another Neo-Assyrian ritual. "An oppressive spirit which si[t]s on a person—it seizes his mouth. He will not eat bread; he will not drink water. They tie an adult male goat to the head of his bed. They cut a staff from the orchard. They make it multicolored with red dyed wool. They fill a cup with water. They cut off a bough from the orchard. They put the staff, the cup of water (and) the bough three times in the (city gate called) 'eternal gate'" (Ebeling 1931: no. 19:1–9). This hopefully will ensure that the cure is also "eternal," thus avoiding the necessity of repeating the ritual.

"In the morning, they bring the adult male goat, the bough, the staff, and the cup to the steppe. They leave the staff with the cup together somewhere to one side" (*ibid.*: 10–13). These are gifts appropriate to one about to make a journey to the Netherworld. "They bring the bough (and) the adult male goat to the edge of the road. They slaughter the adult male goat. They leave the fetlocks on the hide (when they skin it). They cut off the head. They cook the meat. They bring [two?] *kappu*-bowls of copper filled with honey (and) oil. They clothe the bough in the hide. They tie the front fetlocks with

[31] For other opportunistic rituals designed to link up with seasonal celebrations, see Scurlock (1995: 93–107).

red wool. [They] dig a [p]it. They pou[r] the [h]oney (and) oil into it. They cut off the forelegs. They pu[t] them into the pit; that is, they put in the bough (and) the forelegs on to[p]. They bur[y] (it) [with di]rt from a cistern" (Ebeling 1931: no. 19:14–28). The spirit, having shared the patient's meal of goat meat, will be greedy and go to find the rest of the animal. When he does, he will find himself a headless wonder, buried in a pit with his feet not only tied together but detached and sitting on top of him.

"... He (the patient) eats this [m]eat without ... his hands ... [Th]at person will recover. The spirit that was on him will get up (and go). He will open his mouth. He will eat bread. He will drink water" (Ebeling 1931: no. 19:32, 34–36). We need not doubt the efficacy of this rite if, as seems likely, it is a case of "I won't eat till you give me meat." Having consumed an entire goat, the patient's craving should be fully appeased and his "evil spirit" well-exorcised. If ethnographic parallels may be trusted, however, the meat will have been served to him unsalted.[32]

Burials as a means of disposal of evil-carriers also feature in rites designed to counteract sorcery. "If 'cutting-of-the-breath' has been performed [against] a person and (the ritual remains) are found, you take those ritual remains that were found (and) place them before Šamaš (god of justice). You make your complaints to Šamaš. Before Šamaš, you cut (the throat) of a pig over those ritual remains. You gather those ritual remains into the pig skin" (BAM 449 i 1–5). The person against whom the sorcery was performed is asked to recite and to make his complaint, after which the porcine package is safely buried (BAM 449 i 6–9).

This particular ritual does not indicate what exactly it was that the horrified victim found; other rites are, however, unfortunately more explicit. "If 'cutting-of-the-breath' [has been performed against] a person with a roof rodent (and) the roof rodent with its (throat) cut is found in the person's house (and) the ... door and bolt have been hexed (presumably smeared with the blood), you ta[ke] that roof rodent and place it [before Sîn]" (BAM 458 i 8–11).[33] The person against whom the sorcery was performed is asked to recite

[32] It is occasionally mentioned that meat offered to gods was first salted (BBR no. 1–20:80, 83, 86; Menzel 1981: T 46:4–6; T 78 v 12'–13'; T 102:19–20; T 112:22, cf. 7–17). This at least raises the possibility that meat specifically offered to demons could be so marked by omitting the salt, as in Moroccan healing spells.

[33] Note also BAM 464: 11–12 (with a mongoose and the Big Dipper).

and to say whatever is on his mind (BAM 458 i 12–13; BAM 449 ii 1–4).

In this case, the burial was performed properly. "You take that roof rodent and gather (it) into a hamster skin. You gather bits of silver, gold, iron, lapis, *dušû*-stone, chalcedony (and) alabaster into it. You pour in oil, first quality oil, fine salve oil, cedar oil, honey, ghee, milk, wine (and) vinegar. You tie up the front side. You cover it with a linen garment. You gather it into a grave. You make funerary offerings. You exalt (it and) honor (it; i.e. give it a funeral oration). You carry out its (funeral) rites for seven days" (BAM 449 ii 4–9).

In some rituals, actual physical contact between the patient and the carrier ensured a successful transfer. "If a man is continually dizzy (and) says: 'Oh, my heart!' ... You slaughter a caged chicken/goose over his heart. While tearing out the heart of the chicken/goose and putting it over his heart, the *āšipu* lays his hands on him (the patient) and says as follows: 'Remove the evil ghost; remove the evil ghost so that it does not approach the man's body. May it (the heart) chase away whatever is evil for him (the patient).' He says (this) seven times and when he removes the bird's heart and lays it on the ground, a woman who is past childbearing age picks (it) up and (does so) without looking behind her. ... When he places the heart in a hole facing east, she closes its (the hole's) opening with dough made from *šigūšu*-flour and (does so) without looking behind her" (LKA 85:1, 5–18). The idea of this heart-to-heart with the chicken/goose was to persuade the patient's ghostly problem to move to a new, and appropriate, home. Once inside, it would quickly find itself trapped. For good measure, the opening to the hole was smeared with some of the bird's blood mixed with earth from the Ištar temple and magnetite (for magnetic attraction) (LKA 85:22–25).

Less strenuously, the entire carcass could be used to rub off evil. "Take a white adult male goat of Dumuzi and make it lie down facing the afflicted person and tear out its heart[34] and put it into the hand of that person ... Rub the adult male goat whose heart you have torn out, (followed by) bread (and) dough, over that man and ... dump (them) into the street" (Campbell Thompson 1904: 32/34:73–

[34] This offering was presumably intended for Ištar, Dumuzi's lover.

87).[35] Similarly, in the *bīt rimki* ritual: "You cut (the throat of) an adult male goat and you rub the king off (with it). Afterwards you rub the king off with clean purificants. When the purificants are used up, you make them go out of the door" (BBR no. 26 ii 1–3).

The carcass of a slaughtered animal could similarly be used to soak up the evil influences sure to be lurking in dark corners of a building.[36] "He calls a slaughterer to decapitate a sheep; the *āšipu* rubs the temple off with the body of the sheep ... The *āšipu* carries the body of that sheep and goes to the river. Facing west, he throws the body of the sheep into the river ... The slaughterer does the same thing with the sheep's head" (*Racc.* 140/141:353–354, 357–360).[37]

Although common, it was not absolutely necessary for there to be such direct contact between the person or thing to be purified and the purifying animal. In some rituals, it was sufficient simply to tie up or hang a carrier in the vicinity of the ritual performance as silent witness. A particularly acrobatic ritual was used to chase away evil *alû* or AN.TA.ŠUB.BA. "When something touches him, the *āšipu* gets up. He hangs a mouse and a shoot of thornbush over the vault of the door. The *āšipu* dresses in a red garment. He puts on a red cloak. (He has) a ra[ven in] his right hand, a falcon in [his left]. He pu[ts ...] on a seven gated c[enser]. He grasps a ..., holds a to[rch with] both [hands], stri[kes] with a [w]hip and recites the 'ḪUL.GÁL.ME.EN'" (Parpola 1993: no. 238:10–rev. 4).[38] For good measure, the hapless spirit was hounded out of the door by a second *āšipu*, armed with censer and torch, reciting the "ḪUL.DÚB È.BA.RA" (Parpola 1993: no. 238 rev. 5–10).[39]

When the performance was a long one, as with the Neo-Assyrian ritual for rebuilding a temple, a thoughtful officiant provided something for the silent witness to eat. "You take a white sheep whose horns and hoofs are perfect and wash its mouth with juniper. You

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[35] The rubric (36:104) identifies the goat in question as a *mašḫultuppû* (see below).

[36] This ritual has justly been compared to the rituals performed on the Israelite Day of Atonement (Lev 16:15–19). One of the reasons that temple buildings and the statues of gods or, for aniconic deities, the upright stone, ark and the like need periodic purification is that they become polluted with the problem causers (e.g., demons, misdeeds, pollution, bad omens, curses, witchcraft) that they have obligingly removed from human supplicants during the course of the year (see n. 27).

[37] Note that, in this rite, the sheep here takes the place of the usual scapegoat (*mašḫultuppû*).

[38] Part of this recitation, along with the ritual instructions described in this letter, is cited in Geller (1985: 136/137 ad 857 and 138/139 ad 872).

[39] For the full incantation, see Geller (1988: 6:47–58).

tether it to a cedar peg. While you keep it tethered [you have] (it) eat all sorts of garden produce. ... (A complicated set of instructions follows for the manufacture of a figurine of Ninšubur. That done,) you release the sheep and stand over it. You pull wool from its forehead and tie it to the head of (Ninšubur)'s scepter. (Having exchanged its wool for any evil lurking about Ninšubur, the sheep was ready to be sent to the Netherworld.) You cut the throat of that sheep as if it were a lamb and you pour a [lib]ation over its death wound" (Borger 1973: 178: 28–29; 179: 37–39).

A curious ritual, apparently designed to get a person out of trouble with the gods, made similar use of a lamb:

> You beat out a [threshing fl]oor at the bank of a river. You make the threshing floor face the st[ep]pe. ... You put a bed on the threshing floor. You put out *ḫabnūtu*-vessels with *ḫaršu*-bread (and) *ḫabnūtu*-vessels with pomegranate cuttings on their rims. You tie their necks together with a multicolored cloth. [You put] a *kap*[*pu*]-bowl of oil (and) four loaves of *ḫuḫurtu*-bread on the bed. You arrange four poles in front of it. You arrange a table (and) a reed [altar] at the head of the bed. At the head of the bed, [you tethe]r a vir[gin] lamb [to] a cedar [sta]ke with a multicolored cloth. You dress her with a *naḫlaptu*-cloak of white wool. [Y]ou tie her with a woven cloth. You put copper rings and copper bracelets on her. You put a *pursītu*-vessel of *dalīqātu*-groats before her. (Ebeling 1931: no. 22:2–3, 9–19)

Another arrangement is set up for Šamaš and the seven judges, who are also upon called to witness the ritual. A number of recitations are sung or recited invoking Gilgameš and the goddess Ištar (for whose benefit the bed has been erected) and a number of offerings are made, all of which are unusual (Ebeling 1931: no. 22:20–rev. 9). At the culmination of the ritual, the blood of the lamb seems to have ended up in the river, along with the rest of the offering arrangement (Ebeling 1931: no. 22 rev. 15–16).

A pair of live goats feature as silent witnesses in a NAM.BÚR.BI against fire set by lightning. "You station two virgin she-goats to the right and left. You cover them (like married women). You put a waterskin on them. ... You fill four small *pursītu*-vessels with emmer beer and put (them) to the right and left. You fill fourteen unbaked *širmu*-vessels with *billatu*-beer and you put (them) out. You gather old shoes (and) wrappings from the person's foot into the waterskin. You tie its mouth with a cord" (Maul 1994: §V.3: 141–44). After the usual prayers by the riverside and a ritual dipping, this rather curious

offering arrangement is cleared away and dumped into the river, thus sending the evil off, complete with provisions, to the Netherworld" (Maul 1994: §V.3:145–146).

A goat was also the obvious bystander of choice for the NAM.BÚR.BI for the man who regretted too late having had intercourse with a goat. "You take hair from the she-goat. On the roof, before Šamaš, you tie up a virgin she-goat and you take hair from a she-goat whose hair (and) body are red. You lay (them) out before the virgin she-goat and pour a libation of beer over (them)" (Maul 1994: §VIII.17:2–6). The juxtaposition between your recent conquest and a goat with whom you have not slept plus the presence of red and white together indicate a desire for permanent separation. (As a deflowered female will never be a virgin again and as red will never become white or white red, so may I and the evil be parted forever.) "You tie that hair up in a linen cloth. You put it on the ground before Šamaš. He kneels on it and says as follows ... He says this three times and reports his doings and then prostrates himself" (Maul 1994: §VIII.17:7–8, 22). The evil is now in the goat hair package. "You throw that linen cloth into the gate of a beer merchant and (after) fifteen days you remove it. The profit of the beer merchant will be diminished but the omen will stand to one side and its evil will not approach the man and his household." (Maul 1994: §VIII.17:23–27). The hapless beer merchant was probably singled out for a dry spell due to the fact that his profits came under the purview of the goddess Ištar (see e.g., Ebeling 1919: 40–46), who is otherwise closely associated both with goats and intercourse.

Less picturesque, but considerably more dignified, was the ceremony of the *mašḫultuppû* (Cavigneaux 1995). "You purify the house with the *mašḫultuppû* goat, the holy water vessel, the (drum made from) the hide of the big bull, the big copper bell, *šebirbiridû*-grain, censer (and) reed torch."[40] One assumes that the *mašḫultuppû* goat was tied up at an appropriate location, the drum and bell were played, the grain and water from the vessel were scattered, and the censer and reed torch passed round the house (note *Racc.* 140: 340–343). A charming parody of this ceremony is given in a text in which an *aluzinnu* (a comic performer), after boasting that he is "secure as a

[40] Maul, 1994: §V.3.1:113–114, cf. 67–70, §VIII.6.1:8'–10', §VIII.20:28; von Weiher 1983: no. 16 ii 8–19. Note also BBR no. 26 i 20–23, ii 4–6, v 31–33 (*bīt rimki*); von Weiher 1983: no. 5:68–70 (a river).

sieve," "sings like a she-ass" and is "tall as a tortoise," proposes to exorcise a house. "I take over a house (haunted by) the *rābiṣu*-demon (the toilet is presumably meant).[41] I set up the holy water vessel. I tie up the *mašḫultuppû*." (So far so good.) "I skin a mule and stuff it with straw." If this stuffed mule is our friend the big bull hide drum, he has undergone quite a metamorphosis. Bulls are the ultimate masculine symbol and have a hide large enough to cover the largest and noisiest instrument. This "drum" is not only stuffed and therefore soundless, but made from a mule, an animal proverbial for its sterility.[42] "I tie up a bundle of reeds, set it on fire, and toss it inside so as to spare the boundaries of the house and its surroundings." The reed torch was supposed to be taken round the thing to be purified, not used as an incendiary device. "(When I am finished), there will not be left a single *rābiṣu* in that house, (nor) snake, nor even a scorpion!'" (Ebeling 1931: no. 2 rev. ii 20–25). As we would say, he burned down the house to get rid of the bedbugs.

Mystical commentaries reveal the more serious side to the *mašḫultuppû* ceremony. "The drum and copper bell that are resplendent at the head of the sick man: the drum is Anu; the bell is Ellil ... The *mašḫultuppû* which is thrown down at the head of the patient's bed: (It is) Ninamaškuga, the shepherd of Ellil. The censer and reed torch that are placed in the house of the patient: the censer is Kusu (and) the reed torch is Nusku" (Livingstone 1986: 172: 5, 7–8). The reason for the equation of the bull drum with Anu is that the fate of the bull that was killed to manufacture it paralleled the gruesome treatment meted out to Anu by Marduk when he supplanted him for the kingship. "[The ki]ng, who tosses with the priest the cake (to be baked in ashes), is Marduk (with) Nabû [who] vanquished and crushed Anu. ... The cake that he tosses is the heart of Anu when he pulled it out." (Livingstone 1989: no. 37: 19–20, 23). "Bel went out and defeated Anu, pulled away his hi[de] and assigned his corpse to the Anunnaki, (saying) 'Anu is defeated along with you'" (Livingstone 1989: no. 38:18–20, cf. 21; no. 40:22).

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[41] For normal apotropaion against Šulak, *rābiṣu* of the toilet, see above. This particular twist may have been suggested by lexical equations of ḪUL.DÚB with *rābiṣu* (Cavigneaux 1995: 53–54).

[42] Alternatively, it is possible that our stuffed mule is a parody of the UDU.TI.LA which is also mentioned in connection with this ceremony. There is an Old Akkadian incantation which, in so far as it is comprehensible, seems to involve a black sheep which is used to purify a house and which seems to have had its skin stuffed (see Cavigneaux 1995: 58–59; cf. B. Foster 1996a: 58).

Burned heart and flayed hide were also required of the bull drum's original owner, as we know from the ritual for the manufacture of a *kalû*'s copper kettledrum (*Racc.* 10–33).[43] "An expert inspects an uncastrated black bull whose horns and hooves are intact from his head to the tip of his tail. If his body is black as pitch, they take (him) for the rites and ritual performances. If he is spotted by seven white star tufts (or) if he has been struck with a staff or touched by a goad, they do not take him for the rites and ritual performances" (*Racc.* 10 i 2–6). The color requirement relates to the fact that such drums were used for laments and, in particular, those made during the course of an eclipse (Beaulieu and Britton 1994: 74:18–22, 76:17–24; Ebeling 1931: no. 24:42–43, 45). The reason for taking an animal that had been very gently treated was presumably to avoid having an angry hide ill-disposed to carry the message entrusted to it (cf. Num 19:2 and Deut 21:3).

Offerings to the Anunnaki and Igigi follow. "You lay down a reed mat. You [scat]ter sand beneath the reed mat, and you surround the reed mat with sand. You set that bull on the reed mat, tying his [le]gs with a tether made of goat's hair" (*Racc.* 10 i 12–15; cf. *Racc.* 20:4–6). The drum would not do its job properly if the hide used to cover it was in any way impure, hence the care to isolate the animal even before slaughter.

Offerings to Kusu, Ningirim, and Lumḫa and other lesser deities follow. "On the bull you perform the rite of Washing the Mouth. You whisper the ... (Sumerian) recitation through a sweet reed tube into the bull's right ear. You whisper the ... (Akkadian) recitation through a sweet reed tube into the bull's left ear" (*Racc.* 12 ii 8–12; cf. *Racc.* 20:7–13; for the recitations, see *Racc.* 26:9–26). The drum was expected to "speak" to the gods, either in Sumerian (for older divinities) or in Akkadian (for the younger ones); since the bull from which the drum was being made could not be expected to know either language, he required instruction, after the incomprehensible bellows he was want to utter had been literally washed out of his mouth.

"You sprinkle (the bull) with cedar resin. You purify him using a censer and a reed torch. You draw a magic circle of flour around him. Standing at the bull's head, you sing ... to the accompaniment of a bronze *ḫalḫallatu*-drum. After that, you recite ... You slaughter

[43] Note the commentary, which gives a diagram (Livingstone 1986: 187–204).

that bull and start a fire with cedar. You burn his heart with cedar, juniper, and *maṣḫatu*-flour before the kettle drum. You remove the tendon from his left rump and you bury the body of that bull (wrapped) in a single red ... cloth. You pour *gunnu*-oil over him and lay him so that his face points to the west" (*Racc.* 12/14 ii 12–21; cf. *Racc.* 20:14–16). The purpose of the magic circle was to keep the impurities that the brazier and torch had removed from simply moving back in again. The offering before the drum ensured that the bull had, so to speak, his heart in the music.[44] Finally, burying the body facing west ensured safe transmission of the parts not desired by the musician to the Netherworld.

"You take the hide of that bull and soak it in crushed flour made from clean barley (and) in water (mixed) with beer and wine. You die it red with ghee from a clean calf, alum from the land of the Hittites and madder[45] and you cover the bronze kettledrum (with it). With the tendon of the (bull's) left rump you ... its opening ... The *kalamaḫḫu* must not eat any of the flesh of that bull" (*Racc.* 22 rev. 5–9, 14; cf. *Racc.* 14 ii 21–25, 30). As is appropriate to a musical instrument, the hide was tawed rather than tanned, by a technique that still is used to produce Moroccan leather. It would not, obviously, be appropriate for the user of the hide callously to eat its former owner's meat. The *kalû* was also supposed to remove his turban and to say three times: "The totality of the gods did these deeds; I did not do (them)" (*Racc.* 20/22:17 rev. 1–4).

The ritual for the preparation of the big bull drum used in the *mašḫultuppû* ceremony is not preserved, but was probably similar, with the obvious exception of the color of the animal, and the exact recipients of attendant sacrifices. Given that a bull provided significant portions of self to this drum, which was to be played in the course of expelling demons from a house, it is not inappropriate to think of him as a not-exactly-silent witness and as a carrier off, and driver out, of evil.

In some cases, it is made explicit that an animal carrier was also intended as a substitute for the patient. "Namburbi for the evil of a dog that howls and whines in a man's house or spatters its urine on

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[44] Note also the use of a sheep's heart to enliven the figure of Dumuzi in K 164:8–9, 22–23 (see Scurlock 1992). Doubtless it was not irrelevant that living hearts beat like a drum.

[45] For *ḫūratu* as "madder" as against the old translation of "gall nut," see Stol (1983: 534–35).

a man ... You make a dog of clay. You put cedar on its neck. You pour oil over its head. You clothe it in goat hair. You put horse bristles on its tail." (The *āšipu* makes offerings to Šamaš. The patient kneels at the river bank and lifts up the figurine. Three recitations are delivered, one to the god, one to the figurine, and one to the river.) "'Because of this dog which has voided its urine upon me, I am concerned, upset and worried. (Šamaš), avert from me the evil of this dog, so that I may sing your praises' ... '(O Dog figurine), I have given you as a [replacemen]t for myself, I have given you as a substitute for myself' ... '(River), take that dog straight down to your depths; do not release it!' ... He throws that figurine into the river" (Maul 1994: §VIII.4: 10–12, 14–17, 29–33, 36, 52–53, 57).[46]

In addition to being substitutes in their own right, animal figurines also served as supplementary accompaniments to substitute figurines in human form. "To remove an attack of *li'[bu* of the mountain], you take the urine of a live donkey, (its) halter and hair from his tail and you mix the donkey urine with clay from the tablet house, pouring (it in). You make two donkeys. You place the (donkey's) halter on (their) halter, the (donkey's) tail hair on (their) tail hair. You make a saddled *agallu*-donkey of normal clay. On the *agallu* you put a substitute figurine" (Meier 1939: 200 i 1–9). As the text hastens to explain, you are to make a human figurine from the patient's urine and the patient's hair and fingernails. It is to be clothed, turbaned, and seated on the *agallu* (Meier 1939: 200 i 10–15). "(As for) the two pack donkeys that go in front of the *agallu*, you fill a net sack with [bread] and put it on one. You [put a second] net sack filled with flour on the other" (Meier 1939: 200 i 15–19). To round out the cast of characters, a clay donkey drover, also clothed and turbaned and armed with a goad, is stationed behind the donkeys and the lot are gradually coaxed out of the house and eventually left to the care of a friendly thornbush while the patient returns home, pausing only to make the door promise not to let the evil back in (Meier 1939: 200/208 i 20–v 13).

The idea of giving a substitute or "replacement" was for the god, ghost, demon, or bad omen, to do to it whatever terrible thing it was that he/she had intended to do to the victim.

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[46] Note also the very similar rituals for a badger and a wild cat (Maul 1994: §§ VIII.5, VIII.6.2).

> [When you wish to give] a substitute for the person to Ereškigal (goddess of the Netherworld), at sunset, the patient makes a vir[gin] she-goat lie with him in bed. Before the night brightens, he gets up and you prostrate yourself and across (from you) the patient carries the she-goat in his lap and he enters a house where the earth is turned over and you throw the patient (with) the she-goat to the ground. You touch the throat of the patient with a dagger of tamarisk wood. You cut the throat of the she-goat with a bronze dagger. You wash the insides of the corpse with water. You rub her with oil. You fill her insides with aromatics. You dress her with garments. You shoe her with leather shoes. You daub kohl on her eyes. You pour sweet oil on her head. You take the turban from the head of the patient and bind it to her head. You treat her like a dead person. You put her in place. The patient gets up. He goes out between the gate(posts) and the *āšipu* recites the recitation: 'If the touch of a god touches (someone)' three times. The patient takes off his clothing and gives it with a gift to the *āšipu* and, when he goes out [between] the gate(posts), the *āšipu* (with) a shout says '(It is) for so-and-so, the patient; he has gone to (his) fate!' You set up a breast-beating. [Three] times you make funerary-offerings to Ereškigal. You set out hot broth made from barley gruel. You exalt (her). You honor (her). You pour out water, beer made from roasted grain, milk, honey, ghee (and) oil as a libation. You ma[ke] funerary-offerings to the ghosts of your relatives. You ma[ke] funerary-offerings to the she-goat. You recite the recitation: 'The great brother is her brother' before Ereškigal. You put the [she]-goat in place (in the grave) as if she were a living person. You bury her." (Tsukimoto 1985: 125:1–28)

For a woman who had had one too many stillbirths, a lamb provided the substitute of choice. "You strangle a female lamb but do not cut off its head ... You swaddle it in cloth like a baby[47] ... That woman pours out a libation of beer. She puts the lamb down between her breasts. She says as follows: 'I did not bring my pregnancy to term. I gave birth (but) I did not create (life) (*banû*). May one who brings to term receive it from me and leave me (*wuššuru*?!) my reward (*banītu*). May I prosper (*ešēru*) and give birth safely (*šūšuru*) in the house where I dwell.' ... You put the shearling that is to receive (the evil) from her in her lap and you make it go to her breast. You put the figurine of the daughter of Anu (i.e. Lamaštu) and whatever (else) you (normally) put (with her) into a boat and make it cross to the other side of the river" (von Weiher 1988: no. 84:4–5, 9–14). As baby killer *par excellence,* Lamaštu was the obvious source as well

[47] For a similar swaddling ritual, using a female mouse, see von Weiher (1998: no. 248: rev. 30–34).

as the obvious recipient of such an evil.

In some animal substitute rituals, it is made explicit that this process of transmission of evils was not simply a transfer but an exchange of good and bad qualities between patient and recipient. In other words, when the patient was purified or released, what was actually happening was that the recipient was being obligated to give the patient purity or release or other benefits in return for the sickness that the patient had transferred to him (Scurlock in press).

> You set out a censer (burning) juniper before Gula (goddess of healing). You pour out a libation of *miḫḫu*-beer and she (the patient) says as follows: "Ninkarrak, [ex]halted mistress, your merciful mother, may the pregnant ewe of Šakkan and Dumuzi (gods of domestic animals) receive my pregnancy from me and give me her pregnancy. May she receive from me (my) inability to give birth right away and give me her ability to give birth right away." She says (this) three times and then in the morning before Šamaš you ignite a brush pile on top of bricks. You scatter juniper. (von Weiher 1998: no. 248: rev. 12–19)

The offerings to Gula are designed to enlist her aid and to ensure the compliance of the ewe.

"One should secure(?)[48] a pregnant ewe which brings (its young) to term to an uprooted (pole). Two [...]-s carry it. The pregnant woman (who, as is made clear from a parallel ritual using a pregnant she-ass [von Weiher 1998: no. 248: rev. 35–37], is supposed to crawl under the suspended ewe), says as follows into the ears of the pregnant ewe: 'Pregnant ewe of Šakkan and Dumuzi, take my pregnancy away and bring me your equivalent. Take away (my) inability to give birth right away and give me your ability to give birth right away.' She recites (this) three times each into both ears and, when she recites (it) she comes out from below the ewe. And when she comes out the seventh time, facing the [steppe] she spits into the ewe's mouth and she goes out to the steppe and leaves it (there)" (von Weiher 1998: no. 248: rev. 19–24). Between the recitation into the ears and the spitting into the mouth and crawling seven times beneath the suspended ewe, the problem should be thoroughly transferred to the animal, which will henceforth be unable to bear live

[48] Reading *lis-kil*. Reading and interpretation are uncertain.

young and which is therefore left in the steppe for wild animals (whose ability to bear live young is hardly desired) to eat.

Animal substitute rituals could get quite messy, as in one designed to expel the *asakku*-demon. "[Take] a piglet; [put it] at the head of the afflicted person. Remove its heart (and) [put it] on the man's epigastrium. [Sprinkle] its blood on the sides of the bed. Disarticulate the piglet and spread (the pieces) out over the sick man, then purify and cleanse that person with pure sweet water from the holy water basin and pass the censer and reed torch by him and scatter seven and seven cakes baked in ashes at the outer gate and give the piglet as his substitute and give (its) flesh instead of his flesh, (its) blood instead of his blood so that they may take (it instead of him). Give the heart which you put on his epigastrium instead of his heart so that they may take (it instead of him)" (Campbell Thompson 1904: 16/18 ii 44–iii 18; cf. Tsukimoto 1985: 131).

This ritual is somewhat abbreviated; one could, if desired, go through the substitution ritual body part by body part, intoning: "He has given an adult male goat for his life. He has given the head of the adult male goat for the head of the person, the neck ... for the neck ... the breast ... for the breast ... the right side ... for the right side ... the left side ... for the left side ... the blood ... for the blood ... the heart ... for the heart ... the ribs ... for the ribs ... the backbone ... for the backbone ... the thigh ... for the thigh ... the rump ... for the rump ... the limbs ... for the limbs" (Prosecký 1978: 247/249:17–41; cf. Tsukimoto 1985: 131–32).

The use of animals as absorbing pads for evil is distinguished from their use in sacrifices to the gods in a number of ways. Most notable, apart from the total or partial absence of the normative sacrificial ritual and the fact that the animal sometimes survives the experience, is the not uncommon practice of dressing it up in womens' costume. Also notable is the preference for goats over sheep and the tendency to use animals (such as pigs, dogs, and frogs) that are never or only rarely sacrificed or that do not feature in the occasional sacrifices that accompany the rituals (such as rodents, birds, and fish).

AFTERWORD

In sum, animals played an important role in ancient Mesopotamian religion. Some spirits were actually animalian; some animals actually quasi-demonic. Living animals served as conduits of communication between men and gods. It was they who provided draft power to pull the god's chariot; without them the god could not "go out" to celebrate his most important festivals. It was they also who provided food for the god's table. Of practical use on a day to day basis was the employment of animals to buy off demons and/or to exchange evils for benefits with the Netherworld.

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CHAPTER FOURTEEN

ANIMAL SACRIFICE IN ANCIENT MESOPOTAMIAN RELIGION

JoAnn Scurlock

The relationship between men and gods in ancient Mesopotamia was cemented by regular offerings and occasional sacrifices of animals. In addition, there were divinatory sacrifices, treaty sacrifices, and even "covenant" sacrifices. The dead, too, were entitled to a form of sacrifice. What follows is intended as a broad survey of ancient Mesopotamian practices across the spectrum, not as an essay on the developments that must have occurred over the course of several millennia of history, nor as a comparative study of regional differences.

REGULAR OFFERINGS[1]

Ancient Mesopotamian deities expected to be fed twice a day without fail by their human worshipers.[2] As befitted divine rulers, they also expected a steady diet of meat. Nebuchadnezzar II boasts that he increased the offerings for his gods to new levels of conspicuous consumption. Under his new scheme, Marduk and Ṣarpanitum were to receive on their table "every day" one fattened ungelded bull, fine long fleeced sheep (which they shared with the other gods of Babylon),[3] fish, birds,[4] bandicoot rats (Englund 1995: 37–55; cf.

[1] On sacrifices in general, see especially Dhorme (1910: 264–77) and Saggs (1962: 335–38).

[2] So too the god of the Israelites (Anderson 1992: 878). For specific biblical references to offerings as "food" for God, see Blome (1934: 13). To the term *tamid*, used of this daily offering in Rabbinic sources, compare the ancient Mesopotamian offering term *ginû* "continual."

[3] Note that, in the case of gods living in the same temple, this sharing could be literal.

[4] From the earliest times, both fish and birds were offered to the gods alongside the more expensive sheep and oxen (see Blome 1934: 191–93, 202–8). In the Sumerian disputation between the Bird and the Fish, the fish boasts: "I deliver altogether the

Heimpel 1990: 605–9), eggs (Beaulieu 1991), honey, ghee (clarified butter), milk, the finest of oil, sweet *kurunnu*-beer (and) pure wine "(plentiful) as river water" (Langdon 1912: 90 i 16–28; cf. 154 iv 28–57).

Nabû and Nanay favored a more balanced diet. They were to get "every day" one fattened ungelded bull, sixteen long fleeced sheep (which they shared with the other gods of Borsippa), various types of birds, bandicoot rats, fish, "abundant vegetables, the delicacies of the garden (and) ruddy fruits, produce of the orchard" (cf. *Racc.* 119:20) dates, Dilmun dates, white figs and raisins in addition to beer and wine (Langdon 1912: 158/160 vii 3–20; cf. 92 ii 26–35).

It is hard to judge Nebuchadnezzar's claims to generosity,[5] but there is no reason to doubt that what was, so to speak, on offer, could vary considerably from time to time and place to place.[6] Old Akkadian inscriptions from Elam boast of daily offerings of "one sheep in the morning and one sheep in the evening" (Gelb and Kienast 1990: 325/326 ii 14–17 [Puzur-Inšušinak]). In the Neo-Assyrian period, by contrast, palace accounts indicate that the offerings of the queen alone for one particular day came to "one ox, two sheep, one spring lamb, one duck before Bel; one sheep before Nabû. One female calf, one sheep before Sikutu. One sheep before Šarratsamme. Total one ox, one female calf, six sheep, one duck."[7]

In the Seleucid period, Anu, Antu, Ištar, Nanay and the other gods of Uruk were expected to eat four times a day, consuming among them a total of twenty-one barley fattened sheep, four milk-fed male lambs, twenty-five grass-fed sheep, two oxen, one calf, eight female lambs, seventy birds of various kinds including ducks, four bandicoot rats and six eggs (of which half were from ostriches), in addition to 243 loaves of bread and equally gargantuan quantities of beer,

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abundance of the pure shrine, even to the great offerings to lustrous Ekur" (Vanstiphout 1997: 583 ll. 97–98). The bird's similar claim to fame he portrays in a rather different light: "They pour out cool water in narrow jugs for you and then drag you away to the daily sacrifice" (582 ll. 43–44).

[5] Nabonidus claims to have increased the number of sheep given to Sîn and Ningal by a factor of three (Böhl 1939: 166 ii 21–22).

[6] Although the daily offerings seem to mount inexorably, the number of oxen killed in connection with calendric rites may actually have decreased over time (Blome 1934: 63, 69–70).

[7] Offerings for the 6th of Du'uzu (Fales and Postgate 1992: no. 175 rev. 6–12). Similarly: "Two oxen, one *sisalḫu*-ox, thirty sheep, two ducks before Ištar of the temple ... offerings of the month Abu, 11th day" (Fales and Postgate 1992: no. 181:3–4).

wine and milk, not to mention oil, dates, and figs (*Racc.* 74–86). The largest of these meals was the first, accounting for eighteen of the sheep, one of the two oxen, and the calf. The second, also in the morning, disposed of twelve more sheep, the remaining ox, the lambs, the rats, all of the eggs, and all but ten of the birds. By comparison, the last meal of the evening, consisting of a mere ten sheep, rates as a snack.

This was, of course, only the everyday fare, not counting the "monthly offerings"[8] and the numerous festivals that enlivened the ancient Mesopotamian calender. If the texts from Emar are any indication, the sumptuous stews and bird pies for which we have recipes from the Old Babylonian period (Bottéro 1995) would have been prepared on such formal occasions. The Emariot pie, which was manufactured from flour and oil, and which contained no less than forty birds, plus correspondingly large quantities of raisins, figs and pistachio nuts, is reminiscent of Moroccan *bisteeya* (Emar VI.3 no. 388:7–10).

Already in the Ur III period, animals intended for eating seem to have been stockyarded (i.e. acquired in advance of need so that the animals that might have walked some considerable distance before reaching their final destination could be plumped up, giving the gods fat, juicy meat in place of what would otherwise have been lean and rather tough [Sigrist 1992: 23–27]). In the Neo-Babylonian period, to make doubly sure that the right degree of marbling had been achieved, the god Anu of Uruk was offered "fine, fattened, ritually pure sheep which had eaten barley for two years."[9]

On a purely economic scale of value, the offering of an ox represented a considerable sacrifice.[10] It is, therefore, hardly surprising to notice that cult objects (viz. the divine stool, chariot, harp or plow), when appealed to with sacrifices, generally rate only a goat (M.E. Cohen 1993: 87, 89, 187; cf. 171, 174; Blome 1934: 97–98).[11]

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[8] That is, extra animals offered on specific days of every month, viz. new moon, full moon and half way between. See Sallaberger (1993: I:37–96); Charpin (1986: 307–18); *Racc.* 79 rev. 32–34; *CAD* G 135–36 s.v. *guqqû*; cf. Blome (1934: 63–65). Compare Num 28; Ezek 46:4–7.

[9] *Racc.* 77 rev. 4–5. Note also "one fattened ox for the god's meal" (MDP 10 55 no. 71:1 [Ur III]).

[10] See Blome (1934: 62–63, 79–80) on the comparative rarity of cattle offerings at Lagash (as compared to sheep and goats).

[11] Some very special objects, such as the boat of the god Anu got full priced offerings (M.E. Cohen 1993: 218).

Generally, sacrificial animals were chosen from domesticated stock,[12] but the gods of ancient Mesopotamia seem to have liked the occasional flavor of game (Osten-Sacken 1994: 235–58 with references; cf. Blome 1934: 111–16), particularly deer and gazelle.[13] Other favored morsels were barley-fattened bandicoot rats, a marsh-dwelling rodent (already mentioned above).[14] Sumerian gods in particular seem to have had a passion for seafood (Sallaberger 1993: I 116–17, 200; Blome 1934: 202–8; Van Buren 1948: 102–3); Ur's pre-Sargonic calendar contained a month of "Enki's eating of the male GIR(-fish)" (M.E. Cohen 1993: 126), alongside the patron moon-god Nanna's months of eating AMAR.SAG(-duck) or U_5.BI-bird (M.E. Cohen 1993: 129; cf. 147–48; Sallaberger 1993: I 195) and gazelle (M.E. Cohen 1993: 144–45; cf. Sallaberger 1993: I 194).

Draft animals were not generally eaten by ancient Mesopotamians and, since gods usually share the tastes of their worshipers, horses or donkeys were not offered as food for the divine table. Equids were not, however, entirely safe from the sacrificer. Deluxe burials sometimes included chariots, and the dead could hardly be expected to use them unless draft animals were provided (McGinnis 1987: 10). The annual donkey sacrifice at Mari was presumably similarly motivated. "The day of the *gimkum*, donkey carts (*qersū*) are set up (and) a donkey is killed" (Birot 1980: 142 ii 7–10). Note that the animal is "killed" (*dâku*) not "offered" (*naqû*), a good indication that it was not intended in any sense as a divine meal. Also "killed" were the horses slaughtered in connection with Neo-Assyrian royal burials (McGinnis 1987: 3 ii 7–10; for the use of donkeys in treaty sacrifices see below).

Some animals, although generally eaten, were very rarely offered to divinities. This was certainly true of the pig, which was a com-

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[12] Apart from birds, the Israelites seem to have sacrificed such animals exclusively (see, e.g., Lev 1:2–3, 10; 3:1, 6–7, 12; 4:3, 14, 23, 28; 5:6, 15, 18, 25).

[13] Gazelle, otherwise a rare offering, feature in the ceremonies for the month of Abu at Emar (Emar VI.3 no. 452:39, 44, 50, 51) and the great festival of the moon god Nanna at Ur (M.E. Cohen 1993: 156) as well as in the ÈŠ.ÈŠ. festivals of Enlil and Ninlil (Sallaberger 1993: I 56, II 14, 21). Note also the offering of a young gazelle to the gods by the *barû* (diviner) when his work seemed not to be going well (BBR no. 100:12–23). Deer are offered even more rarely than gazelle; see Blome (1934, 112–14); cf. Sallaberger (1993: I 56, II 14, 21, 80); Heimpel (1975: 418–21). Also attested are mountain rams (ŠEG_9.BAR); see Sallaberger (1993: I 56, II 14, 21, 80).

[14] There was also a "porcupine-eating" month at Ur III Ur (Sallaberger 1993: I 195). Note that M.E.Cohen (1993: 145–47) argues that the word "porcupine" in the name of the month should instead be translated "bitter herbs."

mon traffic hazard in the narrow streets of ancient Mesopotamian cities, but whose appearances on the gods' tables were few and far between. The rare examples of pig sacrifice tend to be in nocturnal or Netherworld context, as, for example, the pig slaughtered before Belet-Babili (Ištar of Babylon) on the 8th of Nisannu in Sennacherib's anti-Babylonian version of the *akītu*-festival (Livingstone 1989: no. 34:44; cf. M.E. Cohen 1993: 422), the pigs required for the festival of Nergal (YOS 5 178:5), the reed-fed pigs offered to the moon-god Nanna at night during the *akītu*-festival of the seventh month (M.E. Cohen 1993: 151, 411, cf. 412) and to the boat of the primordial god Anu at Ur (M.E. Cohen 1993: 218), the pigs offered in Tašrītu and other months to the "Sacred Mound" (M.E. Cohen: 105, cf. 85) and the pig dispensed as part of the funerary sacrifices for Amar-Sīn (M.E. Cohen 1993: 117). Pigs were otherwise unclean animals, hardly more welcome in a temple than a dog: "The pig is impure ... [it defil]es everything behind it, makes the streets stink ... besmirches the houses. The pig is not fit for a temple ... an offense to all the gods" (Lambert 1960: 215 iii 13–16).

Gods could also have their little quirks; Šakkan refused to eat mutton, Ningublaga, beef and Belet-ṣeri, poultry. Ereškigal, dread goddess of the Netherworld and not a lady to be crossed, might accept a sheep or goat, but never ox meat or fowl (*Racc.* 79 rev. 40–42). A man going up to the temple of his god could touch a "dog of Gula" with impunity, but was advised not to have leeks, *saḫlû*, garlic, onions, beef or pork on his breath (CT 39 38 rev. 8, 11).

Such likes and dislikes were important to know; on various days of the year specified in hemerologies it was an offense against Ellil or Ninlil to eat roof rodents (Labat 1939: 168:14–15, cf. 172:18; Hulin 1959: 48:8, cf. 52:38), against Nedu to eat various birds, and against Šulpaea to consume fish (Labat 1939: 116:52–56).[15] Fish was also not to be eaten on the first three days of Nisannu (Labat 1939: 50/52:8, 18, 23), doubtless due to the fact that the defeat of Tiamat by Marduk was celebrated during this first month of the Babylonian calendar. In view of the analogy between the treatment of fish for cooking and what was supposed to have befallen Tiamat at the hands of Marduk during the course of their cosmic struggle, it would have been a good idea to avoid fish at this particular time. (She was "split

[15] The day in question, the seventh of Tašrītu, was a day of which it could be said with some justice: "If in doubt, don't!" (M.E. Cohen 1993: 391–92).

into two parts like the fish of the drying place" (Livingstone 1989: no. 39 rev. 2).[16] In intercalary months, on every seventh day (plus a few extra days mid month), meat cooked over coals or bread baked in ashes or "anything which fire has touched" was not to be indulged in (P. Jensen 1915: 12 i 30, 14/16 ii 15, 41, 18/20 iii 3, 35; cf. Virolleaud 1905/06: 378:13; cf. Exod 35:3) which, as we know from one of Gudea's inscriptions, meant getting by on dates, yogurt, honey, berries, fig cakes, cheese and grapes (Edzard 1997: 90 iii 18–24).

Prohibitions on the eating of pork on certain days come as no surprise.[17] It is amusing, however, for those who remember the custom of eating fish on Fridays to note just how many days in the ancient Mesopotamian calendar there were when it was not recommended to eat fish.[18] On some fish-forbidden days, the scrupulous could make sport, as long as they released their catch back into the river (Labat 1939: 84:34; cf. 108:62; note also 170:35; Hulin 1959, 48:20 [he is not to eat bird meat and he is to release any captive bird]). There were also, however, days on which a hunting or fishing expedition would cost the perpetrator the good will of Sumuqan (18th of Nisannu [Labat 1939: 60:42–44; Virolleaud 1905/06: 378:4–5]; cf. the 3rd of Tašrītu [Labat 1939: 176:14]). A number of occasional rituals also warn against eating *saḫlû*, garlic, leeks and fish, which are interdicted for the day or so required for the rite (Maul 1994, § V.3: 26, 88; Caplice 1970: 132 no. 39:8'; Oppenheim 1959: 286:105–6). It is hard to say how seriously the average ancient Mesopotamian took such prohibitions; similar warnings against doing business on certain days seem often to have been ignored.[19] Most people probably took care to observe those rules that were associated with calendric rites or with a personal or city god or with a ritual specially arranged and paid for.

Hemerologies had some joy to offer even the most religiously scrupulous of confirmed carnivores. On the first day of Nisannu, a

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[16] The line is quoted from *Enūma eliš* iv 137.

[17] See, e.g., Labat (1939: 102:5, 120:15; cf. 168/170:22–23, 170/172:43, 45–47, 178:18–19); Hulin (1959: 48:12, 50:26–27 [alongside beef and goat meat]). Sometimes, beef and fowl alone were forbidden (P. Jensen 1915: 44:24–25).

[18] See, e.g., Labat (1939: 50:8, 18, 52:23, 60:42, 68:4, 76:62, 84:34, 112:20, 25, 116:55, 166:40–41, 170:27, 176:10); Hulin (1959: 48:15); Hunger (1992: no. 231 rev. 5); cf. P. Jensen (1915: 46:10).

[19] Graphs of legal documents from Assyrian cities do not show a consistent pattern of avoidance of unfavorable days in the middle of the month (see Livingstone 1993: 111–13).

hopelessly fish-free day, it was actually recommended that you eat beef, mutton or fowl along with your emmer bread and emmer beer (Hunger 1992: no. 38 rev. 1; cf. no. 231 rev. 3–5; note also P. Jensen 1915: 46:7), doubtless to signal the desire for the opportunity to eat more meat in the coming year. The tenth of Ayyaru also presented an opportunity to change your luck, which you could seize by eating *arsuppu* bread, drinking date wine, eating beef, mutton or fowl and spending the night with a woman (von Weiher 1983: no. 23:1, 8).

OCCASIONAL SACRIFICES

In addition to the daily ration, animals were offered to gods in occasional sacrifice as, for example, when someone was ill. As a general rule in non-salvation religions (and in the folk version of Abrahamic religions as well), occasional sacrifices are made in a spirit of a contract between a person and a god or between a person and a demon or between a person and a demon with a god as guarantor. The person agrees to provide animals or other gifts or, at the very least, to be thankful, and the spirit engages to cure him or to solve his problems (*do ut des*). Such a contract may also be initiated by a deity who, by performing some unasked-for benefit, obligates the person to respond with a corresponding sacrifice (as in the biblical *tôdâ*). The person has the option of fulfilling his side of the contract up front, thus putting the deity under obligation (as in many ancient Mesopotamian magical rituals). Alternatively, he may simply ask for assistance, promising to pay up later (as in the biblical *neder*, the Akkadian *ikrību*, and the Medieval English "vow").[20] Finally, he may offer a partial payment up front, with the rest to follow upon compliance (the Moroccan *'ār* and *hedīya*). In any case, the giving of a sacrificial "gift" (Akkadian *qīštu* or *kadru*)[21] can be seen to "complete" or "fulfill" (*šullumu*) the human being's side of the contract,[22] thus "pacifying" an otherwise outraged spirit, hence the biblical term for occasional sacrifices: *šēlāmîm*.

[20] It should be noted that, in contrast to biblical Israel, persons vowed (or otherwise consecrated) to a divinity did not have to be killed unless redeemable (Lev 27:28–29; 1Sam 15), but simply became part of the temple staff, an option not open in Israel.

[21] For the Sumerian equivalent (A.RU.A), see van der Mieroop (1989: 397–401).

[22] For the use of *šullumu* specifically to refer to completely carrying out a sacrifice, see, e.g., Grayson (1991: 151:74–75).

Although vows are certainly attested in ancient Mesopotamia, it was a very common pattern for the sacrifice (if there was to be one) to be made right away with praise to follow if the spirit fulfilled his side of the bargain. The technical term for such spontaneous offerings was *šagigurû*, which means literally "what you have your heart set on" (ŠÀ IGI *karru*) or "wish" (*bibil libbi*), a good indication that a *quid pro quo* was involved. Among the Israelites, in contrast, the most typical arrangement seems to have been the vow, although it is conceivable that the "freewill offering" (*nēdābâ*)[23] was, like the Mesopotamian *šagigurû*, a sacrifice offered to set a contract.

The effectiveness of a contractual sacrifice is directly proportional to the power of the thing offered to enforce the contract that the sacrificer wishes to make. The *baraka* of a piece of bread may be sufficient, but the spirit of an animal killed for the purpose may be called for, particularly if it is a divinity of some importance that is involved. It follows that to insist on the sacrifice of an animal (as in the Cain and Abel story, Gen 4:3–5) is to assert one's primacy in the spirit world.

Ancient Mesopotamian gods were somewhat more modest; although animal sacrifice is common in occasional rituals, it was perfectly possible to make a purely vegetarian offering even to deities so exalted as Marduk and Šamaš.[24] "Šamaš, the diviner brings you cedar resin, the widow *maṣḫatu*-flour, the destitute woman oil, the rich man brings a lamb from his riches" (Oppenheim 1956: 340 K 3333:9'–10').[25] The festivals organized by Ur III kings to celebrate their jubilees seem to have consisted of a wonderful variety of vegetarian offerings, namely, barley, peas, dates, figs, cheese, honey and fruit (M.E. Cohen 1993: 177–78, 183, cf. 153).[26]

An occasion that one might have thought sure to demand the shedding of blood, in consideration of biblical "sin/purification offering"

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[23] This term does not seem to be related to its obvious cognate, *nindabû* (for which see *CAD* N/2 236–38). This is apparently also the case with the ancient Mesopotamian term *zību*, which is certainly used of offerings, but not with the same meaning as the Hebrew *zebaḥ*. For references, see *CAD* Z 105–6; cf. also Lambert (1993: 193–94).

[24] For vegetarian sacrifices, see, e.g., Maul (1994: §VIII.1.2:5–10, §VIII.4:17–22, §VIII.6.2:8-12).

[25] Cf. "the widow approaches you with *maṣḫatu*-flour, the rich man with a sheep" (KAR 25 ii 19–20; see *CAD* A/1 363b s.v. *almattu* mng. c). The reference is to different types of divinatory sacrifice ranging in cost from lecanomancy (shape of drops of oil in a basin of water), through libanomancy (patterns of smoke produced by burning flour or cedar resin) to extispicy (the appearance of the internal organs of a lamb).

[26] Note also vegetarian offerings in connections with other calendric festivals (M.E. Cohen 1993: 251–52, 410).

and "guilt/reparation offerings" (Lev 4–5, 6:17–23, 7:1–10) were rites designed to gain divine forgiveness and/or to remove the impurity engendered by misdeeds or cultic offenses. However, as the ritual series *Šurpu* (see Bottéro 1985: chapter 5) shows, such a problem might involve the ancient Mesopotamian in a lot of washing, wiping, peeling and unraveling, but did not absolutely require the sacrifice of an animal.[27]

The most typical animal for occasional sacrifice to any god in ancient Mesopotamia was a sheep, but virgin she-goats also appear with some frequency. A curious substitute for the normal live animal appears in one ritual in which the sun god Šamaš is allowed to melt an "audience present" consisting of a miniature sheep made from tallow (Ebeling 1918: 45/46:5, 12). In many cases, the sex of the animal was the same as that of the deity receiving the offering; this does not, however, seem to have been an invariable rule. Gods could be offered cows, ewes (see, e.g., M.E. Cohen 1993: 86, 92) and even virgin she-goats (as in Maul 1994: §§ V.3.1: 9–13, 77–79, V.3.2: 11–15), and goddesses could receive oxen, billy goats (M.E. Cohen 1993: 99, 102, 138), male lambs, or sheep (Farber 1977: 185:13–14, 227: 25–26; Menzel 1981: T 102:9; BBR no. 1–20:106–109).

DIVINATORY SACRIFICE

For those who could afford it, the solicited omen of choice was divinatory sacrifice. Animals selected for such sacrifice had to be (at least apparently) healthy and unblemished. Preliminary omens were taken from the flaws and markings on the sacrificial animal, and the way it was observed to behave both on the way to and during the sacrifice.[28] This type of omenology is an extension of the universal belief that the gods can signal the non-acceptance of a sacrifice through the behavior of the sacrificial animal.[29] To make doubly sure,

[27] Note also von Weiher (1988: nos. 76–77; ŠU.ÍL.LÁ prayers to soothe angry gods). For the biblical sin offering only, substitution of fine flour for the animal was possible (Lev 5:11–13).

[28] For references, see Leichty (1993: 237–42). For similar sorts of omens, apparently taken from sacrificial birds, see Nougayrol (1967: 23–38); cf. Durand (1997: 273–82). Nougayrol's interpretation seems to be confirmed by the discovery of the relevant introductory formula (Star 1983: 61–63).

[29] In this case, non-acceptance would result in the much dreaded "confused" omen (i.e., one that gave neither a "yes" nor a "no" answer).

the diviner prayed to the gods of divination at every step of the procedure (BBR nos. 75–101), and placated the spirit of the sacrificed sheep by sprinkling water on it. He also removed the head, placing it near an incense burner on the circle used in the ritual, and sprinkled it with water that had been aromatized with Amanus cedar (BBR nos. 84–86).

The killing of an animal for divination required a special ritual during the course of which a formula was recited, asking the god to "write" the answer to the sponsor's question in the exta (BBR nos. 1–20).[30] This prayer is called by the term also used for "vow" (*ikrību*), for the simple reason that such a formula had, of necessity, to be recited before the sacrifice, as would obviously be the case also with vows, but was not, as the rituals describing occasional sacrifices make clear, the case with other prayers associated with sacrifice, which invariably occur after the sacrifice has been performed.

The presence of the *ikrību*, and the fact that the animal was dispatched by a diviner (*barû*) rather than by a priest/king or by an exorcist (*āšipu*) clearly demarcates divinatory from other forms of sacrifice; without the performance of the requisite procedure no message could be expected from the gods. It is probable, however, that any noticeable irregularity that appeared in the course of sacrifices made to gods by priests as part of a regular offering or by *āšipus* in occasional sacrifice, or for that matter during the ordinary butchering of animals for meat,[31] would have been taken as an unsolicited omen.[32]

After slaughter, the internal organs of the divinatory animal were examined by the diviner for any potential defects or abnormalities, beginning with the liver and gall bladder, and proceeding to the lungs, heart, etc. The turns of the intestine seem to have been left towards the last since, for purely practical reasons, they are consid-

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[30] For actual Neo-Assyrian examples of such "oracle questions," together with an illustrated discussion of the terms used in extispicy, see Star (1990).

[31] With Lambert (1993: 194), the presence of verbs for slaughtering that are different from that used for "to sacrifice an animal" (viz. *ṭabāḫu* and *palāqu*) is a good indication that meat purchased from butcher shops in ancient Mesopotamia did not need to be "kosher."

[32] Take, for example, the missing kidney in Nanay's ungelded bull which is mentioned as a sign of divine anger at the misbehavior of Borsippa's shepherds (Parpola 1993: no. 353 rev. 1–3). Note also: "this is the liver which fell to the lot of king Sîn-iddinam when he sacrificed in the temple of Šamaš at the *elūnum*-festival" (YOS 10 1:3; cf. M.E. Cohen 1993: 234).

erably easier to count after they have cooled down to room temperature. Although the omen literature is replete with specific predictions made from specific abnormalities, actual practice seems to have been to tally up good and bad omens to arrive at a simple yes or no answer.

After the diviner had finished his autopsy, the flesh of the animal was available for eating. A person could become very ill if "ill-omened meat comes to exist for him and he eats (it) without realizing it" (BAM 468:4–5). This would seem to indicate two things: that good-omened meat (i.e., the flesh of an animal that had provided a favorable response) was safe to eat, and that the meat of the divinatory sheep, ill-omened or otherwise, might in due course find its way into the stomach of someone other than the diviner. One supposes that the "owner of the sacrifice" would have been expected to eat at least part of a favorable sacrifice to indicate his acceptance of the omen.

TREATY SACRIFICES

Another unusual form of sacrifice was that made in connection with treaties. Here, the slaughtering of the animal provided the occasion for a form of conditional self curse, accompanied by recitations in which the oath takers explicitly wished on themselves the fate of the hapless animal if they should have the ill grace to go back on their word. "This spring lamb has not been brought out of its fold for a sacrifice, or a banquet or for acquiring (it) or for a sick person or to slaughter for ... It has been brought to conclude the treaty of Aššur-nirari, king of [Assyria] with Mati'ilu. If Mati'ilu [sins] against th[is] sworn treaty then, just as this spring lamb has been brought from his fold and will not return to his fold and [will not see] his fold again, so may Mati'ilu ..., alas, [be ousted] from his country, not return to his country, and not [see] his country again. This head [is] not the head of a spring lamb, [it is] the head of Mati'ilu ... If Mati'ilu [sins] against this treaty then, just as the head of this spring lamb is c[ut] off and its fetlock is placed in its mouth, so may the head of Mati'ilu, [alas], be cut off[33] ... This shoulder [is] not the shoulder of a spring lamb, it is the shoulder of Mati'ilu ... If Mati'[ilu] sins

[33] Note also Parpola and Watanabe (1988: no. 6: 547–48), with a ewe that is cut open and the flesh of its young placed in its mouth.

[against] this [treaty] then, just as the shoul[der of this spring lamb] is pulled off and [placed in] ..., so may the sh[oulder of] Mati'ilu ... be pulled off and [placed] in ... " (Parpola and Watanabe 1988: no. 2 i 10–35).

Among the nomads in the region of Old Babylonian Mari, donkey foals seem to have been used customarily for this purpose. "They brought me a puppy and a *ḫazû*-bird to 'kill'[34] the donkey foal (i.e. make peace) between the Haneans and Idamaraṣ but I feared my lord and did not give over the puppy and *ḫazû*-bird. I had a donkey foal whose mother was a she-donkey killed (and) I established peace between the Haneans and Idamaraṣ" (ARM 2 37:6–14).

The exact procedure is not specified, but it is conceivable, in view of the apparent parallel[35] with "covenant sacrifices," that the donkey in question was halved and the treaty partners expected to pass between (cf. also Jer 34:18–20). If so, then it is obvious why the Mariots were not amused with the proposed substitution. The significance of the *ḫazû*-bird is not certain, but the name might hint that it was intended to take out (*aḫāzu*) some evil. As to what that evil was, Hittite sources give us our best clue. A rite that specifically involves men marching between halved puppies is known; it was designed to cleanse a defeated army (Collins 1990: 219–21, cf. 223–24.).

Now, let us suppose that the oath was broken and the gods became angry. Normally, they would express their anger by causing the oath breaker to be defeated in the resulting war. Not in this case, however! Having cleansed himself of any possible consequences in advance, the would-be miscreant was free to break his oath at his leisure.

"COVENANT" SACRIFICES

Yet another unusual form of sacrifice occurs in the course of a celebration, apparently of the New Year's *akītu*-festival, from Middle Assyrian Aššur. "They sea[t] Marduk on the dais of destinies; they do not seat the [r]est of the gods (who remain standing). He (the

[34] The term used is a West Semitic loan word (*qatālu*) which is used in Akkadian only in the context of killing donkey foals for the purpose of making treaties.

[35] On this point, see also Hasel (1981: 61–78).

king) scatters coals on a brazier made of bricks of ... clay. They cut a live lamb in two opposite Marduk. They place (the pieces) on the coals. The king and the priest simultaneously scatter ½ *qû* of juniper, ½ *qû* of cedar chips (and) three *kalu*-bowls of *maṣḫatu*-flour on the lamb. He (the king) completely pours out onto the ground one *laḫannu*-vessel of wine and one *laḫannu*-vessel of beer on either side of the brazier" (Köcher 1952: 194:11–19). Since in Assyria the relationship between man and god was understood as a form of loyalty oath (*adê*),[36] and since Mesopotamian *akītu*-festivals, it has been persuasively argued (M.E. Cohen 1993: 400–406), were intended to celebrate the first establishment of a relationship between gods and their constituents, it is tempting to view in this ceremony a form of "covenant sacrifice" whereby the new relationship between Marduk and the people of Aššur was meant to be finalized. It is interesting, therefore, to compare this sacrifice, in which the offerings are made to surround the sacrificial fire with the biblical "covenant sacrifice" described in Genesis 15. Here, a smoking brazier and a flaming torch are seen to pass between halved animals prepared by Abram in confirmation of a covenant between the god of the Israelites and his worshipers.

Interesting echoes of this type of sacrifice are found in the late Babylonian bonfire festival of Anu during the course of which the deity was lured down from the night sky to take residence in his temple and city.

> A *maḫḫu*-ecstatic wearing a girdle ignites a large reed torch studded with aromatics (and) sprinkled with sweet oil (which has had) "washing of the mouth" performed over it with sulfur fire ... He (the *ērib bīti* who has taken the reed torch down from the ziggurat) enters the great courtyard ... He points it towards Anu. A *ḫarû*-vat is broken in two in front of him. ... He goes to the cella of Antu and points it towards Antu. A *ḫarû*-vat is broken in two in front of him ... He goes out to Ubšukkinnaki and, at the dais of destinies, an ox is struck down before them. A brush pile is ignited from the torch in Ubšukkinnaki. The shoulder of the ox is flayed with the hide and it is touched to the right and left of the brush pile (*Racc.* 119:28–30, 34, 120 rev. 1, 3–8).

[36] ABRT 1 23 ii 27–32; see *CAD* A/1 133a s.v. *adû* A mng. d.

OFFERINGS FOR THE DEAD

Animals were also killed to provide travel provisions and/or funerary offerings for the dead. Archaeological evidence indicates that cattle, sheep, goats, fish and birds were appropriate send-off presents for a ghost.[37] Ur III administrative records recording disbursements for the tenth month of the calendar include entries such as "two grain-fed sheep and two grain-fed lambs for the seat of Šulgi, one grain-fed sheep, one grain-fed lamb and one sheep for the libation place (KI.A.NAG) of Ur-Nammu for the month of the AB.È festival of Šulgi and Ur-Nammu" and "one pig disbursed for the libation place of Amar-Suen (for) the AB.È festival in Nippur" (M.E. Cohen 1993: 117, cf. 149, 158–59). Even more exotic offerings were available in the fifth month ghosts' festival in Old Babylonian Sippar: "a one year old calf for the funerary offering for the month NE.IZI.GAR"; "turtles and tortoises are needed for the funerary offering for the month NE.IZI.GAR" (M.E. Cohen 1993: 278).

Although this sounds very generous, we need not assume that the entire animal actually went to the honored ghost. "He sacrifices one sheep to the *lamassu*'s of Sargon and Naram-Sin in the throne room; he sacrifices one sheep to the .... The sacrifices of the throne room are performed before the king comes, and the meat is boiled and the best part of the meat presented to Šamaš. Before it has been presented to Šamaš, the funerary-offerings are not made. When it has been presented to Šamaš, funerary-offerings (are made) to Sargon and Naram-Sin" (Birot 1980: 139/142 i 5–18). In short, the primary recipient was the god, while the ghosts, like the minor divinities who lived in a major god's temple, received less desirable parts of the animal.[38] Similarly, in occasional rituals in which ghosts are invoked with sacrifice, Šamaš receives the usual shoulder, caul fat and roasted meat; only the rib section actually goes to the spirits of the dead (BBR 2 no. 52:14–21). As to why this particular cut of meat should have been considered suitable for ghostly banqueters, the obvious suggestion is that ribs are a poor man's cut, the sort of thing one might safely give to ghostly beggars, although the fact that ghosts

[37] See, e.g., Delougaz *et al.* (1967: 86, 114), Postgate (1980: 74), Wooley (1934: 144), Jean-Marie (1997: 693–705), Reuther (1926: 156).

[38] Note also that, in funerary offerings made at the grave on the occasion of the funeral at Mari, it seems to have been customary to bury only such truly undesirable parts as the disarticulated hooves, mandibles and horns (see Jean-Marie 1997: 697).

were imagined as skeletons might also have something to do with it.[39]

AFTERWORD

The variety of sacrifices in ancient Mesopotamia reflected the varied needs of the worshipers and the desirability of maintaining clear channels of communication between divine and human realms. The form and procedure of the sacrifice warned the recipient divinity, now that he was entering a new relationship with a particular group of humans ("covenant" sacrifice), now that he was being continued in such a relationship (regular offerings), now that some particular favor was being asked (occasional sacrifice), now that some piece of information was required (divinatory sacrifice), now that he was being called to witness and to ensure the sanctity of oaths (treaty sacrifices).

In sum, animals played an important role in ancient Mesopotamian sacrifice; the regular offerings and covenant sacrifices that they made possible were as crucial for the maintenance of cordial relations between human and divine powers as treaty sacrifices were to cement alliances between human beings. But this was not all.

As we have seen, some spirits were actually animalian; some animals actually quasi-demonic. Animals were thus at least potentially suspended between the natural and the supernatural and, therefore, an obvious choice as messenger to carry information (via divinatory sacrifice) and requests (via occasional sacrifice) back and forth from earth to heaven. They were similarly suited to make the journey from heaven to the Netherworld; the dead were kept literally from eating the living by being placated with offerings that might include animals. Thus, both conceptually and practically, animals formed a bridge between man and the supernatural beings with whom he desired (or dreaded) contact.

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[39] Food and drink intended for the dead might simply be laid out on the grave or actually buried. An interesting example of such a buried offering was found by excavators at Ur: "At three points below these walls, pits had been dug beneath the foundation level. A mat was spread at the bottom of each pit and pottery vessels containing food were placed on it. Then a large, ribbed, bell-shaped clay jar was inverted over the offering, the pit was filled with earth, and the wall was built across the top" (Ellis 1968:128). With Ellis (1968: 126–31), the food was probably intended for the spirits of the dead.

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CHAPTER FIFTEEN

ANIMALS IN THE RELIGIONS OF SYRIA-PALESTINE

ODED BOROWSKI

The relationship between man and animal in ancient Syria-Palestine is manifested most visibly in cultic observance. Animal sacrifice provided the means for expression of devotion and piety and for celebration of family and community. The blood of the victims purified the sacred spaces. Animals substituted for humans, freeing them of guilt and sin. Some were used to define the character and status of the gods, their symbolism adding depth to divine imagery. Some animals bore more than their fair share of symbolic meaning. Snakes in particular seem to have evoked a certain fascination, and were very important in magical performances. If our sources leave us short of a full understanding of human attitudes toward the animals they manipulated so freely, at least they provide us with basis for asking all the right questions.

DIVINE REPRESENTATION

The pace of scholarship in recent years has unraveled a complex iconography of symbols in Syria-Palestine in which particular animals may escort, herald, signify, or substitute for a deity. A cult stand from tenth century Taanach illustrates the rich religious symbolism of this region and the difficulty ultimately of separating god from animal (fig. 15.1).[1] This terracotta stand comprises four tiers, each depicting a simple cultic scene with figures of animals, deities, and architectural features indicating a temple. In the center of the fourth (bottom) tier is a naked female flanked by lions. Two winged sphinxes (cherubim) flank a vacant space in the third tier. The second tier repeats the lion imagery of tier four, this time flanking two ibexes that in turn flank a sacred tree. In the top tier, containing the most

[1] For bibliography on this cult stand see Smith (1990: 19 and n. 89).

Fig. 15.1. Cult stand. Taanach. 10th century B.C. H. ca. 3 ft. Photo courtesy Zev Radovan.

complex scene, two voluted columns flank the central scene. Behind these, on the sides of the stand in side view are the figures of two griffins. The central scene is of a quadruped above which is a winged sun disk.

The tiers represent temple scenes.[2] The lions, cherubim, and pillars indicate the temple structure itself, with the flanking animals reflecting monumental sculptures characteristic of Syro-Palestinian temple architecture of the period (Taylor 1993: 28). The central figures of tiers two and four—ālions/sacred tree with ibexes and naked female—are both interpreted as representations of Asherah. The open space between the cherubim in tier three is an aniconic representation of Yahweh. Finally, the horse and sun disk of the first (top) tier depict Yahweh in his solar aspect, whose chariot the griffins may have pulled (Taylor 1993: 33 and n. 1). In short, in this stand the variety of the imagery in which animals, real and imaginary, represented (horse), enhanced (lions, ibexes), or heralded (lions, griffins, cherubim) the image of deity in ancient Palestine, is laid out for our viewing.

Bull Imagery

Bull imagery has an ancient pedigree in this region of the Near East (Wyatt 1995: 345), and the association of bull imagery with Canaanite El is well-established. The epithet "Bull El" serves to reinforce his status at the head of the pantheon. A similar association for Baal is evident: he too either appears with a bull in the iconography or exhibits its qualities in literature. In his battle with Mot, the two are described as butting each other like wild bulls (Pardee 1997b: 272; A.H.W. Curtis 1990: 19–20). And in the context of Baal's copulation with a heifer (*CTA* 5 v 18ff.), he may have been imagined with certain bovine features (A.H.W. Curtis 1990: 19). This passage has led some interpreters to believe that such bestial acts were part of a ritual drama performed at Ugarit during cultic rituals to influence the fertility of the herds (see A.H.W. Curtis 1990: 18–19 for references), but the assumption is not supported by the evidence. Glyptic art also may attest to the association of Baal with bull imagery in scenes of a bull (Baal) vanquishing a lion (Mot; Keel and Uehlinger

[2] The following interpretations of the scenes on the cult stand follow Taylor's convincing reconstruction (1993: 24–37).

1998: 144–47). The (bull-) horned helmet worn by the gods was a symbol of divine authority but should not be taken literally as an indicator of bovine physiognomy, since even Anat is depicted with horns (Day 1995: 64; see also A.H.W. Curtis 1990: 30–31).

The bull imagery applied to Yahweh in the epithets "bull of Jacob" (Gen 49:24; Isa 49:26)[3] and "bull of Israel" (Isa 1:24), derive from El imagery. Yahweh is said to have horns "like the horns of a wild ox" in Numbers 24:8. Oswalt has argued that the creation of golden images of Yahweh in the form of calves in Exodus was a result of influences absorbed by the Israelites during their sojourn in Egypt, where depicting a bull image of an invisible god would have presented no conflict (1973: 17–19). The borrowing of bull imagery for Yahweh is further suggested by Jeroboam's erection of a gold image of a young bull in each of the shrines at Dan and Bethel (1 Kgs 12:28; Friedman 1987: 47) in the northern kingdom under influence from Canaanite Baal. In Jerusalem, cherubim, which decorated the Ark serving as Yahweh's throne in the temple replaced the bull as a divine pedestal (Friedman 1987: 47, 82; Smith 1990: 51). Whether the twelve oxen or bulls that supported the "molten sea" basin outside the Jerusalem Temple (1 Kgs 7:25) belong in this discussion is not clear.

The recent discovery of a calf or young bull, complete with clay model shrine, in the remains of a small MB II temple (ca. 1750–1550 B.C.E.) outside the city gates of Ashkelon located on the coast of southern Palestine, belongs to this tradition of bull iconography (fig. 6.2; Stager 1991: 3, 6–7). Dating to the Iron I period some five hundred years later, a figurine of an adult bull was discovered at an Israelite cult center in Samaria (ca. 1200–1000 B.C.E.; Mazar 1982) in central Palestine and could represent either Yahweh or Baal. An unusual discovery was made recently at Bethsaida, the capital of the biblical Geshurites, of an Iron Age II stele decorated with an anthropomorphic figure with a bull's head (Arav and Freund 1998). The figure may be a representation of the city's chief deity and is reminiscent of the bull-men so popular in Mesopotamian iconography. These archaeological finds illustrate the longevity of bull imagery in the region.

[3] For a discussion of this understanding of the epithet, see A.H.W. Curtis (1990: 27).

Horse

The use of solar language for Yahweh originated as part of its Canaanite and Near Eastern heritage (Smith 1990: 115–21). In the first millennium, under the influence of the monarchy, "the sun became one component of the symbolic repertoire of the chief god in Israel" just as it had in Assur, Babylon, and Ugarit (Smith 1990: 120). But according to 2 Kgs 23:11, the elements of solar worship within the temple came under fire when Josiah "removed the horses that the kings of Judah had dedicated to the sun, at the entrance to the house of the Lord," after which "he burned the chariots of the sun with fire." The scene on the top tier of the Taanach stand offers further evidence of solar imagery for Yahweh (Taylor 1993: 32, 176–78, 262–63; see also Smith 1990: 116). The quadruped with a winged sun disk on its back, which many scholars have interpreted as a young bull (it has no horns) symbolizing either Baal or Yahweh (Smith 1990: 20; Hestrin 1991: 58), is in fact a horse and relates to the worship of Yahweh in the image of the sun (Taylor 1993: 24–37). In arguing for an Israelite origin for this cult, Taylor comments, "the Taanach cult stand provides warrant for suggesting that a *Yahwistic* rite involving horse and chariot was in vogue within the context of a temple from as early as the time of the founding of the temple itself" (Taylor 1993: 177).

A late tenth-century terracotta figurine from Hazor, of a horse with solar disk, may be further evidence of a solar cult of Yahweh (Taylor 1993: 37–40). The numerous complete and fragmented horse figurines that have been uncovered in Iron Age strata in Israelite houses, graves and cultic sites (Holland 1977: 130 fig. 4) do not belong to this phenomenon. Although many of the figurines display disks on their heads that have been interpreted as sun disks, they are probably only intended to suggest forelocks or exaggerated manes (Holland 1977: 149–51; Keel and Uehlinger 1998: 343; Taylor 1993: 64–65). Nevertheless, owing to their having been found frequently in cultic contexts often with other figurines of nude females and animals and because many seem to have been broken intentionally, most scholars view these objects as having a cultic purpose (Taylor 1993: 59; see also Holland 1975), perhaps in the arena of popular religion.

Goddesses

The Ugaritic goddess Anat was a huntress, who acquired her bow and arrows by killing Aqhat and taking his (Day 1992: 182–83). She was also a benefactress of animals "who provides for and presides over the increase of the herd" (Day 1992: 188), a role that is expressed in art. Like any hunter, she "is also concerned with their welfare in order to maintain a continuing stock of prey" (Day 1992: 190). Day highlights three objects from Minet el Beida near Ugarit that are alleged to depict Anat as "mistress of animals." These objects are: a female represented on an ivory pixis lid, standing on a mountain and flanked by goats to whom she extends stalks of grain; a gold pendant showing a goddess flanked by two snakes, standing on a lion, and holding a gazelle in each hand; and a pendant or plaque portraying a naked goddess with a goat or ibex in each hand (Day 1992: figs. 1–3). But Anat/Astarte also appears standing on a war horse (it wears protective armor) in a Late Bronze Age gold leaf piece from Tel Harashim and on Iron Age IIA seal amulets (Keel and Uehlinger 1998: fig. 71, and §86).

Hestrin (1991: 50–59) has argued that images of the sacred tree in Syro-Palestinian iconography are representations of the biblical goddess Asherah (Ugaritic Athirat). Biblical references describe her symbol as a tree or wooden pole, often located near an altar. Artistic representations show the sacred tree flanked by goats/ibexes or gazelles. Examples of this motif may be found on a ewer (and other objects) from the Late Bronze Age Fosse Temple at Lachish (Hestrin 1991: 51–52), the Taanach cult stand (fig. 15.1), and Pithos A from Kuntillet ʿAjrud (eighth century; Keel and Uehlinger 1998: fig. 219). The symbolism of the animals flanking the tree is not altogether clear, but Keel interprets the motif as bestowing blessing. Examples of the tree with lions, birds, sphinxes, and even anthropoids, in place of the goats/ibexes, are probably (with Keel) "undifferentiated numinous symbols of power," which would presumably make them similar in function and meaning to trees of life found elsewhere in the Near East.

Always a popular companion of the gods, the lion had numerous associations in Syro-Palestinian iconography. Most notably, it was associated with both Astarte and Asherah (Keel and Uehlinger 1998: 22, 56; Smith 1990: 19–20; Hestrin 1991: 57). A silver medallion from Miqne, dating to the seventh century B.C.E., shows a goddess standing on a lion and demonstrates that the motif of goddess and

lion was familiar among the Philistines on the coastal plain (Gitin 1998: 180, fig.18). The term "lioness" occurs as a divine name or theophoric element in Canaanite personal names in the second half of the second millennium (Puech 1995: 981), and is probably to be identified with one or another of these goddesses.

The exact nature of the relationship between the animal and the deity it either supports or represents remains an open question. Frank Moore Cross answers the question of whether zoomorphic images symbolized the deity or were merely a podium or pedestal for the deity as follows: "A god and his animal 'participate in each other,' and while the god may be conceived as enthroned or standing on the bull in Canaanite mythology and iconography, he also is immanent in his animal so that the two may be confused" (1973: 73, n. 117). In either case, the result was the same when the worshiper came to the cult center to sacrifice and pray. As far as the Hebrew prophets were concerned, the Israelites who attended these cult centers worshiped the calves as representations of Yahweh (Hos 8:5–6; 10:5–6; 13:2; Amos 2:7–8; 3:14; 5:21–27).

TABOOED ANIMALS

Religious practice in ancient Israel included the observance of dietary rules that are expressed systematically in the Hebrew Bible (Lev 11; Deut 14:3–21). These rules are unique in Syria-Palestine. The list of clean animals includes wild (deer, gazelles, wild goats and sheep) and domestic (cattle, sheep, goats) ruminants and fish with scales and fins. The lists of prohibited animals, which included birds of prey and scavengers, and, among mammals, the pig, hare, and camel, instructed the pious on how to maintain a "kosher" diet. The origin and reason behind some of these prohibitions, including the specific prohibition against cooking a kid in its mother's milk, continue to be debated (see Borowski 1998: 20 for references). The prohibition against pork use has engendered the greatest amount of speculation. Firmage's preferred explanation that the prejudice against pigs and pork developed originally among sheep and goat pastoralists who viewed pig herding/farming with disgust (1992: 34) fits well with evidence for pork use in Anatolia, for example (Collins 1996). The role of ethnic and cultural determiners in defining pork consumption (Hesse 1990; Hesse and Wapnish 1997; 1998), and the possibility that pork use fluctuated depending on the level of political

centralization (Zeder 1996: 307) are theories that have strong proponents in the current debate.

ANIMALS IN THE RELIGIOUS CULT

Biblical tradition understood animal sacrifice to be an ancient practice. It was performed in the very beginnings of human history (Gen 4:4, 8:10). The procedure for sacrificing animals is detailed systematically in Leviticus, beginning with the choice of victim. Large and small cattle were the victim of choice. They could be adults, or firstlings, depending on circumstances (most sacrifices called for animals three years and younger), and both male and female animals were used. The victim could not have any defect or blemish (Deut 17:1; see also Lev 22:21). Bull sacrifice is amply attested in the Hebrew Bible, especially in connection with the dedication of the Solomonic Temple (1 Kgs 8:63; 2 Chr 7:5) and the rededication of the same shrine by Hezekiah (2 Chr 29:21–22, 32). But those who could not afford to sacrifice larger animals were allowed to offer turtledoves or pigeons (Lev 5:7; Borowski 1998: 214–15).

Although the Levitical system stipulated choosing the sacrificial victim from the domesticated stock, biblical dietary law also permitted the consumption of certain wild ungulates (Deut 14:5). Sites such as the high place at Dan (Wapnish and Hesse 1991: 41) and the "altar" at Mt. Ebal produced large quantities of animal bones, many of which were burnt and had signs of butchering. Identification of the faunal remains from these sites shows that among the domestic ruminants some wild ungulates were represented, indicating that they were also suitable for sacrifice despite their omission from the normative lists (Borowski 1998: 218). Similar evidence is available from the Iron Age II shrine at Lachish (Lernau 1975: 90).

Several sites that have been identified as cultic have also yielded bird bones. The large quantity of birds that must have been required for sacrifices suggest that the Israelites were not relying on captured birds, but that the majority were probably raised under controlled conditions. However, no columbaria or other installations related to bird-keeping earlier than the Hellenistic period have been discovered in Palestine. Several columbaria were found at Hellenistic Maresha in the Shephelah. They were underground installations

capable of housing tens of thousands of doves. Other sites in the vicinity also contained such installations.

The range of sacrifices in Israelite religion have been discussed at length elsewhere and need not be repeated here except in brief, with emphasis on the disposition of the animals within the rites. The daily burnt offering (*ʿôlâ*) was the most important. It involved the sacrifice of only male animals, in which neither priest nor offerer benefited from the meat. The animal was entirely burned and the smoke ascended to heaven as a pleasing odor for divine consumption. Because there was no reciprocity in this act, the *ʿôlâ* is thought to have been a gift offering.

The animal selected for the Purification Offering (*ḥaṭṭāʾṯ*) depended on the category of individual undergoing the rite. Thus the animal could be a bull (priest, congregation), ram (ruler), female goat or sheep (individual), or dove/pigeon (poor) (Jenson 1995: 26). Depending again on the category of individuals for which the rite was performed, after the fat was burned, the animal victim was either eaten by the priests or burned. The blood, as a decontaminating agent, was sprinkled in the sacred precinct. One notable *ḥaṭṭāʾṯ* is the sacrifice of the red heifer described in Numbers 19 (Milgrom 1983: 85–95). The animal was burned completely: "its skin, its flesh, and its blood, with its dung." The blood remained as the active ingredient and the resulting ash was used to purify those polluted through contact with a corpse. Milgrom describes this practice as the vestige of a pre-Israelite rite of exorcism for the corpse-contaminated that was restructured and integrated into Israel's sacrificial system (1983: 95). The Reparation Offerings (*ʾāšām*) are called for in cases of cultic trespass or profanation of sacred items. The animal victim is a ram, whose fat is burned and flesh is eaten by the priests. In both the Purification and Reparation Offerings, the animals served as a substitute for the offerer. "The laying on of hands identifies the substitute, whose death takes place instead of the sinner and results in acceptance, represented by the pleasing odour" (Jenson 1995: 28). In some cases reparation could be paid with a monetary equivalent. The Fellowship/Peace Offering (*šelāmîm*) was the only sacrifice in which the offerer was allowed to participate in the meal. When partaking of the animal, certain parts, especially the right thighs, were given to the priests in exchange for their services (Friedman 1987: 91–92), but the entrails, fat, and blood were set aside for the deity. The communal meal appears to have been the primary purpose of

the rite. The fellowship offering nourished the people while the burnt offering nourished the deity, and the two together form the backbone of the Israelite sacrificial system. It was the usual form of sacrifice on feast days and celebrated fellowship, family and community, as suggested in David's remark to Jonathan (1 Sam 20:6): "For there is a yearly sacrifice there for all the family." Many of these feasts were annual and marked seasonal events such as the harvest, planting, or shearing sheep. Some modern societies in the Levant still observe such meals as religious events (Grantham 1995), while some have a social or business function, just as was the case in antiquity (1 Sam 9:12–24; 16:2–5; 20:6).

The festival of Passover had its origins in the Israelite's pastoral past and originated probably as a celebration of the beginning of Spring (Borowski 1998: 216–18 for literature). The sacrifice (a ram), eaten at night, was the central feature of the celebration. The participants were required to take some of the victim's blood and smear it on the door posts and lintel of the house (either to ward off evil spirits, or as a purification). They then closed themselves in the house and roast the Passover victim over a fire and eat it with unleavened bread.

Recent ethnographic and ethnoarchaeological studies shed some light on the reasons for these biblical feasts and the manner in which they were carried out (Klenck 1995). The biblical custom of not eating certain parts of the sacrificial victim, especially the blood, is similar to behavior by the Rawala Bedouin of Saudi Arabia who after a hunt left "the blood and a portion of the meat ... to appease earthly spirits or ginn which could harm the hunter" (Klenck 1995: 57). At the tombs of saints throughout the southern Levant and North Africa, Bedouin sacrifice sheep, goat, camels, and cattle "to redeem vows, protect their families, safeguard health, make vows, incur healing, give thanks, and ensure their wives' fertility" (Klenck 1995: 57) much like their predecessors in ancient Syria-Palestine (cf. 1 Sam 1).

As in biblical times, Bedouin prefer sacrificing male sheep six to twelve months old, and no more than two-and-one-half years old. The uniformity of Bedouin sacrifice and butchery activities despite their varied geographical origins (Klenck 1995: 60–61 and Table 1) suggests a common background that may lie in the ancient Levant. Bone assemblages from these sacrifices are very similar to collections from ancient cult sites. Bones recovered from Bedouin sites show very few signs of burning. Among the Bedouin, burning is associated not with the sacrifice itself but with the attempts to dispose of the bones

as part of the clean-up process. The Bedouin practice of boiling sacrificial meat is similar to the description given in 1 Sam 2:13–14: "The custom of the priests in their dealings with the people was this: when anyone offered a sacrifice, the priest's servant would come while the flesh was stewing and would thrust a three-pronged fork into the cauldron or pan or kettle or pot; and the priest would take whatever the fork brought out."

Amidst the mythological literature of Israel's neighbors to the north there are descriptions of great festivals involving the sacrifice of large quantities of domestic livestock. When Baal's temple was inaugurated, the event was commemorated with a feast (Smith 1997: 134). Notably, at this feast, the gods are provided with male animals and the goddesses with female, a stipulation that is missing from the extant Ugaritic ritual texts. These celebrations were quickly followed, however, with the commemoration of the death of Baal with the sacrifice of seventy bulls, oxen, sheep, deer, mountain goats and asses (Smith 1997: 152), many of which do not appear on the regular menus outlined in the ritual texts.

Although these and other references to sacrifice in the myths and epics of Ugaritic literature are of considerable interest, they may not reflect accurately the practices of the day and a reconstruction of actual Ugaritic cultic practices of the Late Bronze Age is probably better based on more "practical" documents (Selman 1995: 96–97). Such ritual texts illustrate the existence of a regular schedule of sacrifices and rituals organized around a calendar, including weekly, monthly and annual feasts. Biblical sacrificial terminology has affinities with the Ugaritic vocabulary of sacrifice (Selman 1995: 97–98). Ugaritic *ḏbh*, for example, is equivalent to Hebrew *zebaḥ*, both in form and usage (both can refer either to a sacrificial meal or to blood sacrifice). Ugaritic ritual texts also describe *šlmm* (Hebrew *šelāmîm* "fellowship") offerings. The term *šrp* in Ugaritic ritual refers to burnt offerings and corresponds to Hebrew *ʿôlâ* (Selman 1995: 98).

A Punic sacrificial tariff lists three types of offerings: whole offerings, presentation offerings, and well-being offerings. The first (*kll*) corresponds to the Hebrew burnt offering (Heb. *kālīl* is equated with *ʿôlâ*). The presentation offering (*ṣwʿt*) emphasizes the act of presentation by raising and/or waving the animal in front of the deity, and has parallels in other sacrificial systems (Pardee 1997e: 306 n. 12; Milgrom 1991: 461–73).

Well-being (fellowship) offerings most commonly sacrificed bulls,

cows, rams, ewes and birds. A list of sacrifices appears in one Ugaritic text devoted to the celebration of the grape harvest and wine pressing held in the autumn. It includes offerings of unspecified varieties of birds as well as of domestic pigeons, and large and small cattle of both sexes (Levine, de Tarragon and Robertson 1997: 299–301). The well-being offering is similar to the Hebrew *šelāmîm* not only in the selection of the victim but also in the fact that the animal is consumed by the laity rather than the priests (Wapnish and Hesse 1991: 38). There are differences as well. In the biblical rite, the liver, kidney and fat are burned for the deity, while at Ugarit only the heart is set aside. In addition, there is nothing in the Ugaritic practice comparable to the disposition of the victim's blood in biblical practice.

Many of the texts prescribe certain sacrifices dedicated to particular deities. But the problem with the Ugaritic ritual texts, Pardee points out, is that they are simply too concise to tell us what is happening: "one is constantly asking oneself: Who gets what, when, and why?" (1990). Of the animals devoted to named deities, for instance, were all of them sacrificed, or were some presented live? And how much of those that were sacrificed was consumed at the altar and who got what of that which was not consumed?

A Punic Sacrificial Tariff from Carthage, concerned with the distribution of offerings among the cultic officials and offerers, lists among the animal victims, bovines (immature and mature), sheep and goat (immature and mature), birds, both poultry and free-flying (i.e., pigeons), and deer (again immature and mature). The presence of deer among the acceptable offerings in this text supports the archaeological evidence pointing to the sacrifice of these animals beside domesticated stock in Israelite worship.

OCCASIONAL SACRIFICES

The regular sacrificial system could not address every situation. Unusual circumstances called for unusual measures. Deut 21:1–9 provides a procedure for when a person is found murdered in open country. To absolve the (nearest) town of guilt for the murder, a heifer had to be sacrificed. The animal had to be one that had never been worked (a symbol of innocence) and the sacrifice itself was to take place at a wadi lying in unsown land (also a symbol of innocence).

The animal was killed not by the usual means, but by breaking its neck in the wadi.[4]

A prayer directed to Baal for a city under siege (Pardee 1997k: 283–85) prescribes among other things the offering of a sheep's liver along with birds. In this prayer/ritual a donkey is also offered, which as Pardee notes is extremely rare. It is attested elsewhere only in the very peculiar ritual recorded in RS 1.002 (1997k: 284 n. 15), which he links historically with the old Amorite sacrifice of a donkey in association with various types of agreements and treaties (1997e: 308–9 n. 38; for the Mariote ritual, see pp. 400–401.

Covenant sacrifices were an unusual form of offering in the biblical texts as well. The covenant between Yahweh and Abraham was sealed in Gen. 15:9–10, 17–18 when Yahweh instructed Abraham to

> "Bring me a heifer three years old, a female goat three years old, a ram three years old, a turtledove, and a young pigeon." He brought him all these and cut them in two, laying each half over against the other; but he did not cut the birds in two. ...
>
> When the sun had gone down and it was dark, a smoking fire pot and a flaming torch passed between these pieces. On that day the Lord made a covenant with Abram ...

The same ritual is described in Jer 34:18–20 as Yahweh accuses the Hebrews of breaking the covenant:

> And those who transgressed my covenant and did not keep the terms of the covenant that they made before me, I will make like the calf when they cut it in two and passed between its parts: the officials of Judah, the officials of Jerusalem, the eunuchs, the priests, and all the people of the land who passed between the parts of the calf shall be handed over to their enemies and to those who seek their lives. Their corpses shall become food for the birds of the air and the wild animals of the earth.

This passage suggests the meaning of the ritual: failure to uphold the covenant will bring down upon the parties the fate of the slaughtered animal.[5] However, the ritual form reflects an eastern Mediterranean sacrificial koiné shared with, among others, the Hittites, for whom the practice usually involved a puppy (and piglet) and

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[4] By breaking the animal's neck rather than slitting its throat, the offerers are indicating that the act is not sacrificial (Firmage 1992: 1124).

[5] Compare the Mesopotamian treaty sacrifices discussed by Scurlock, pp. 399–400.

served a purificatory function (Collins 1990). Note in this context a reference to dog and pig sacrifice in Isa 66:3, concerning forbidden worship:

> Whoever slaughters an ox is like one who kills a human being;
> whoever sacrifices a lamb, like one who breaks a dog's neck;
> whoever presents a grain offering, like one who offers swine's blood;
> whoever makes a memorial offering of frankincense, like one
> who blesses an idol.
> These have chosen their own ways,
> and in their abominations they take delight.

Ritual acts normally considered acceptable are here compared with acts of abomination, which include breaking a dog's neck, perhaps an allusion to a magical purification similar to the Hittite rite (Collins 1990: 224), and offering a pig as a sacrifice.

The Azazel rite attested in Lev 16:7–22 is an elimination rite for which there are parallels outside the Hebrew Bible. The origin of the rite seems to be in southern Anatolia and northern Syria (Janowski and Wilhelm 1993) whence the ritual spread to Palestine/Israel, perhaps via Ugarit (see the Ugaritic "scapegoat" ritual *KTU* 1.127:29–31; Janowski 1995: 243). The goat is a living substitute that absorbs the pollution (the sins of the people) by the laying of both hands on its head, after which it is sent into the wilderness "for (the demon) Azazel." The scapegoat rite is complemented by the sacrifice of a second goat for Yahweh as an atonement. The use of the two goats is similar in principle to the rite in Lev 14:2–7, which uses two birds to remove the impurity of a person suffering from skin disease (usually translated leprosy). The first bird is slaughtered and a second live bird is dipped into its blood. The blood is sprinkled on the patient, who is pronounced clean, and the bird is then released (Wright 1987: 75–80).

One other unusual animal substitution must be mentioned. The practice attested in the Hebrew Bible of causing "one's son or one's daughter to pass through the fire" is attested for Israel and the Punic colonies from the seventh through the third centuries B.C.E. Inscribed stelae at Carthage and elsewhere, according to Eissfeldt's theory, testify to this being a particular form of sacrifice rather than a sacrifice for a deity, Molech. The inscriptions distinguish between *mlk'mr* and *mlkk'dm*, the latter referring to the sacrifice of children, and the former to the sacrifice of sheep, which, one assumes, were offered as substitutes for the children (Heider 1995: 1091). In the excavat-

ed sacred precincts at Punic sites, the remains of small animals were found along with those of children. Evidence points to the possibility that the deity Molech may have been a ruler of the underworld, and that the sacrifice was thus connected in some way with the cult of the dead, and was perhaps carried out in fulfillment of vows or connected with necromancy.

Evidence of mortuary rites involving animals is limited. But in one Ugaritic ritual that Pardee interprets as a funerary ritual for the king (RS 34.126), after a seven-fold repetition of lowering the king into the earth, a bird is offered to the ancestors (Pardee 1996: 275). The inclusion of deer in the Punic sacrificial tariff, which are not on the normative lists of animal victims at either Ugarit or in the Hebrew Bible, suggests that some animals other than domesticated livestock may have been acceptable offerings in certain situations (Pardee 1997e: 308 n. 38). Pardee points out that almost nothing is known about the cultic status of animals among Israel's contemporaries that in Hebrew contexts would be unclean. One exception to this is the archaeological evidence from an Edomite sanctuary at Ḥorvat Qiṭmiṭ near Arad (seventh/sixth century B.C.E.) suggesting that Qôs, chief god of the Edomites, received ostriches as votive offerings appropriate to a desert god (Knauf 1995: 1273).

Such evidence opens up the discussion of the role of wild animals in the sacrificial system. Here we rely on the limited archaeological evidence. Among the faunal assemblages at a handful of sites in Israel, including Jaffa (Canaanite), Dan (Israelite), and Miqne (Philistine), lion bones have turned up. The context of the finds from Jaffa—a lion's skull found next to a broken scarab seal—suggested to the excavators that a lion cult was being practiced (Stern 1993, 2: 656). Wapnish and Hesse attribute the significance of the lion bones found in the Altar Complex at Dan to the city's association with lions in literary tradition (1991: 47–48). A lion figurine found in a shrine at Arad (Herzog *et al.* 1984: fig. 20) suggests that the lion had a special status in Judah as well.[6]

Ashkelon Dog Burials

One of the most remarkable archaeological finds relating to animals are the hundreds of dog burials from Ashkelon dating to the Per-

[6] For lion iconography associated with architecture, see Caubet, chapter 6.

sian period (from 538 B.C.E. through ca. 332 B.C.E.; Hesse and Wapnish 1993). The animals ranged in age from small puppies to adults, and both males and females were represented. They met their deaths for the most part by natural causes, and the higher percentage of puppies is more or less consistent with the mortality rates among free-ranging urban dogs. Each burial was a discrete event, and placement was wherever there was space. There was no pattern in the orientation of the burials and the pits were unlined with no materials accompanying the burials, although the animals were placed in the pits rather than thrown. The weight of evidence suggests to Hesse and Wapnish that it was only the act of burial that was important. Although no religious interpretation for these burials has been confirmed, neither has the possibility been excluded. Were the dogs buried because they were sacred? Or were they buried because they were unclean? The cosmopolitan nature of the city of Ashkelon in the Persian period adds to the difficulty in assigning a particular meaning to the burials: "Perhaps ... the practice of burying dogs is a syncretism, a local amalgam of attitudes towards dogs and the burial ritual that cannot be attributed to a particular culture" (1993: 76).

ANIMALS AND MAGIC

Unlike the Egyptians and Mesopotamians, the ancient inhabitants of Syro-Palestine produced no corpus of texts specifically dedicated to magical activities (de Tarragon 1995: 2071). Nevertheless, technical texts related to divination are preserved in the archives from Ugarit, including birth omens from malformed births of sheep and goats, and clay models of animal livers and lungs used in extispicy. Despite the well-known proscriptions against magical activities in the Hebrew Bible (Lev 19:26, 31; Deut 10–11, 14) and the best efforts of Israel's rulers, such practices were slow to die out and traces of evidence of animals used for divination and magic can be found. A popular method of divination in Palestine was the use of astragali (knuckle bones of animals such as goats, gazelles, and pigs) in casting "lots." The dove and raven dispatched by Noah to see whether the water had subsided may be an echo of the practice of augury (Gen 8:9–12).

Figurines of male animals, including rams and ibexes, suggest that sympathetic magic to influence fertility may have played an impor-

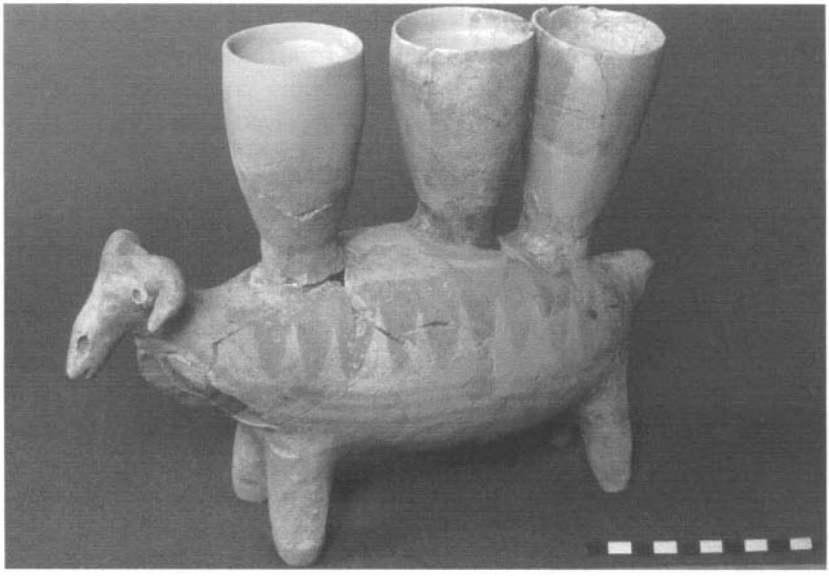

Fig. 15.2. Cultic vessel in shape of a ram with three goblets. Gilath. Chalcolithic period. Photo courtesy Zev Radovan.

tant role in Syria-Palestine. Such figurines were recovered from Neolithic Jericho, Chalcolithic Gilat (fig. 15.2) and the Treasure Cave at Nahal Mishmar (Bar-Adon 1993: 824), Early Bronze Halif, and many other sites. The range of finds further suggests the antiquity and longevity of such beliefs.

In the realm of the miraculous, Moses was pitted against the Pharaoh's magicians in a contest of magic. He threw down his staff and it turned into a snake. The magicians responded by matching this feat, but because Moses' power came from a higher authority, his snake devoured those of the magicians. Of the ten plagues that Moses subsequently brought down on Egypt, in four, the bringers of destruction were animals (frogs, gnats, flies, and, locusts), but they were a creation of magic rather than its instrument.

During the wilderness wanderings, Moses, on instruction from Yahweh, placed a bronze snake on a pole so that anyone bitten by a snake could look upon it and be healed (Num 21:4–9). This is the same object that Hezekiah later destroys in his purging of the Temple in Jerusalem of unacceptable elements (2 Kgs 18:4). The Bible reports that the people had been burning incense to the bronze snake.

The principle of fighting like with like is behind this magical cure. Most ancient Near Eastern societies were afraid of venomous reptiles and insects, but it is perhaps more than coincidence that the handful of magical incantations that have survived from Ugarit largely concern the curing of snake bite. Pardee identifies one of these as a libretto in mythological form to a ritual against venomous snakes (Pardee 1997j: 295). The protagonist in this composition is a mare who, seeking a snake charmer, sends a message to twelve deities. Only the last of these, Horon, proves effective. One recently discovered incantation against serpents and scorpions was composed specially for the high official, Urtenu, and was found in his archive (Pardee 1997i: 327–28). "We learn from this text that especially to be feared was the joining of forces between sorcerers and serpents" (Pardee 1997i: 327).

Numerous examples of the snake in Palestinian iconography suggest that it had a special place in the cult. An Iron Age I cylindrical ceramic stand decorated with serpents and birds was discovered at Beth-Shean (fig. 15.3). The serpents are coiled about the vessel, poised to strike at the birds perched on it. It has been suggested that the birds may be symbols or harbingers of spring, while the serpent, as a denizen of the underworld, signifies winter and death. A copper snake with a gilded head was recovered from the last phase of a shrine in Timna (near Eilat), dated to the end of the twelfth century B.C.E. (Rothenberg 1993: 1483). Such objects call to mind the serpent wands used in Egyptian magic.

In an incantation against sorcery (and the resulting illness) from Ras Ibn Hani, the gods Baal and then Horon, through the incantation priest, drive away the sorcery directed against a young man:

> So you [the attacker] shall depart before the voice of the incantation priest,
> like smoke through a chimney,
> like a snake up a pillar,
> like goats to a rock,
> like lions to a lair.
> Staff, attention!
> Draw near, staff!
> (Fleming 1997: 301).

The sorcerer used a staff, which is invoked in this text to turn against its user (Fleming 1997: 302 n. 6). Both staff and sorcerer are ultimately driven into the Underworld. Aside from the further use of a

Fig. 15.3. Ceramic cult stand with serpents. Beth Shean. Iron Age I. Photo courtesy Zev Radovan.

staff in matters pertaining to therapeutic magic, this passage illustrates how animal imagery might be employed for magical purposes.

Also in the realm of therapeutic magic is the use of the hair of a dog in the "para-mythological" text titled "'Ilu on a Toot" (Pardee 1997c: 304). The hair is placed on the forehead of someone suffering the after-effects of a drunken binge. As Pardee notes, the use of dog hair and other body parts in therapeutic magic is commonplace in antiquity (1997c: 204 n. 24).

CONCLUSION

Penetrating through the concision of the Ugaritic scribes and the human focus of the biblical writers, is a clear picture of the powerful role played by animals in connecting the realm of the divine with that of humanity in Syria-Palestine. As offerings, animals were conduits of communication between man and god, and through the conveyance of symbolic messages, they animated the images of the divine.

PART V

STUDIES IN THE CULTURAL USE OF ANIMALS

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CHAPTER SIXTEEN

HUNTING, ANIMAL HUSBANDRY AND DIET IN ANCIENT EGYPT

DOUGLAS BREWER

INDIGENOUS WILD FAUNA

Archaeological work conducted on Egypt's prehistoric wild terrestrial fauna is uneven with respect to regional coverage, so it is difficult to draw definite conclusions concerning human-animal relationships for periods earlier than the Predynastic (Table 16.1). In fact, most of the available evidence about Paleolithic hunting economies in Egypt has come from the Western Desert (fig. 16.1). Around 100,000 B.C., the Sahara was an open savanna-like environment rich in big-game animals. Dating to this time is the Acheulean site of Arkin 8, the earliest known house-like structure in Egypt. Discovered in association with the structure were lithic tools, the bones of an equid and ostrich eggshell, but it is difficult to determine whether the Arkin 8 remains represent an episode of hunting, scavenging, or both (Chmielewski 1968: 110–17).

From 48,000 to 28,000 B.C., Mousterian (Levallois) cultures flourished across what is now the Sahara. Further refinement in stone-tool technology increased hunting efficiency so that by Aterian times (38,000 to 28,000 B.C.) even the largest grazing animals fell prey to Paleolithic hunters. Evidence at the site of BT 14 lends support to this newly acquired hunting prowess. The site, located at Bir Terfawi (fig. 16.1), has been interpreted as a large Aterian kill-site extending over several thousand square meters. Faunal remains from BT-14 indicate that Aterians exploited the fauna of the savanna and the smaller animals of the oases. Species found there include rhinoceros, extinct Pleistocene camel, a large bovine, equids, two species of gazelle, fox, jackal, warthog, several species of antelope, ostrich, turtle and a variety of birds (Wendorf and Schild 1976: 106).

Contemporaries of the Aterians, the Khormusans (45,000 to 15,000 B.C.) lived along the Nile (Marks 1968a: 315). Although they did hunt animals living along the river's alluvial plain, such as aurochs (*Bos*

Table 16.1. Predynastic and Dynastic Chronology of Ancient Egypt.

	Predynastic	
Date (BC)	*Upper Egypt*	*Lower Egypt*
5200		Fayum A Neolithic
4800		Merimden (Neolithic)
4400	Badarian	
3750	Amratian (Naqada I)	Omari A (?)
3650	Early Gerzean (Naqada II)	Omari B (?)
3400	Late Gerzean (Naqada II)	Late Gerzean (Maadian)
3300	Naqada III	Naqada III
3150	Protodynastic	Protodynastic
	Dynastic Period	
Date (BC)	*Period*	*Dynasty*
3050–2686	Archaic	1–2
2686–2181	Old Kingdom	3–6
2181–2040	1st Int.Period	7–11
2040–1782	Middle Kingdom	11–12
1782–1570	2nd Int. Period	13–17
(1163–1555)	(Hyksos)	(15)
1570–1070	New Kingdom	18–20
1069–656	3rd Int. Period	21–25
656–332	Late Period	26–31
332BC–AD323	Graeco-Roman	

primigenius), equids, gazelle, antelope and hippo, Khormusans appear to have focused a great deal of energy on the exploitation of fish, particularly the large Nile catfish (*Clarias* spp). This suggests a major cultural division existed by mid-Pleistocene times between Nile-oriented Khormusans and desert-oriented Aterians.

After 33,000 B.C. Egypt's environment became increasingly more arid. This period of aridity lasted for nearly 15,000 years. As wetter conditions returned, the Halfan culture thrived from about 18,000 to 15,000 B.C. between the Second Cataract in the south to Kom Ombo (fig. 16.1). Like the Khormusans, the Halfan people hunted big-game animals such as aurochs, smaller mammals and birds and fish, but the miniaturization of their tool kit represents a refinement over the Khormusans (Butzer and Hansen 1968; Marks 1968b; Said 1975; Hoffman 1984).

In Upper Egypt at least three other archaeological tool traditions representing the local cultures of the Fakurians and two variants of Idfuan were present at this time. Idfuans and particularly the Fakurians found that compared to hunting quadrupeds, fishing for certain easily

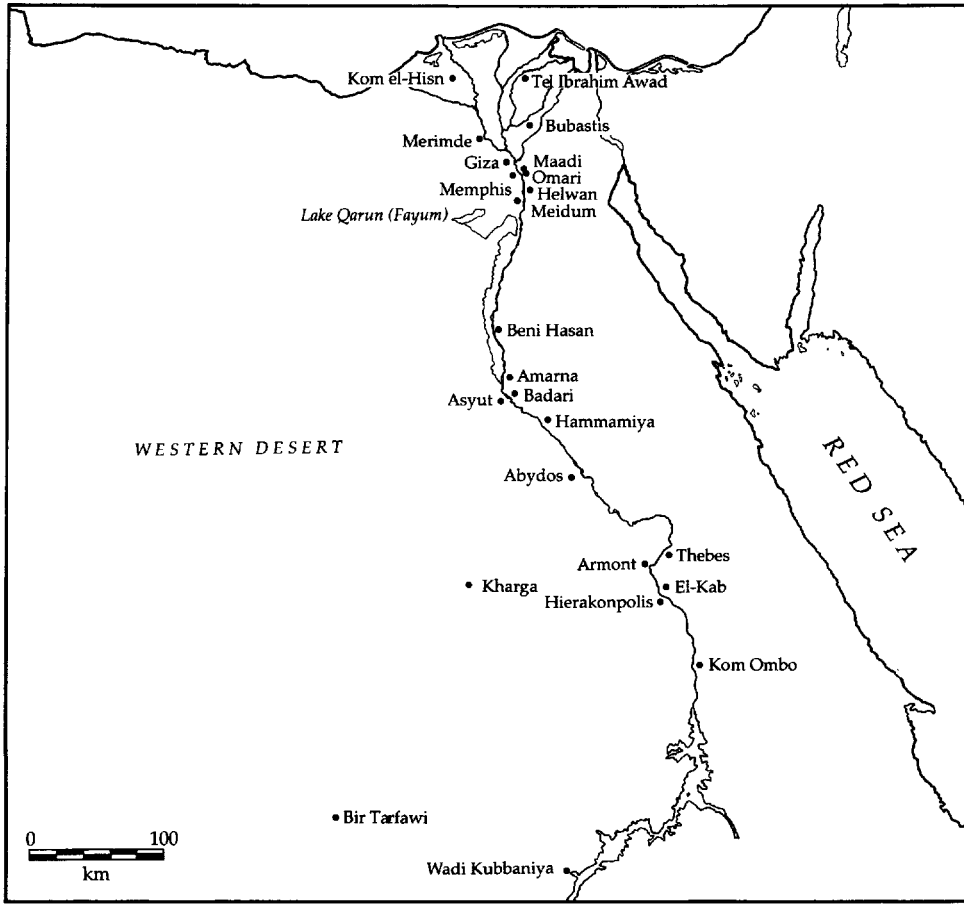

Fig. 16.1. Location of important sites mentioned in the text.

obtainable taxa provided an abundant source of protein with relatively little expenditure of time and effort. At Wadi Kubbanyia (ca. 16,000–10,500 B.C.; fig. 16.1), the seasonal settlement pattern included a shift to the summit of nearby dunes to take advantage of seasonally available fish resources. During the late summer flood, fish were brought into shallow pools that formed between the dunes at the edge of the alluvial plain. As the flood receded, the stranded fish were then easily caught. The summits of the dunes thus provided an excellent place to camp while fish were being gathered (Wendorf and Schild 1980; Hoffman 1984: 83).

Further insights concerning prehistoric subsistence activities come from research at Lake Qarun in the Fayum (fig. 16.1). Faunal remains provide evidence that Late Paleolithic (Qarunian) and Neolithic groups relied heavily on the lake's fish resources. Fish accounted for 74% of the Paleolithic and 71% of the Neolithic faunal assemblage. The shallow water Nile catfish (*Clarias* spp.), the most predominant animal recovered, accounted for 66% of all animal remains. Seasonality studies carried out on the Nile catfish demonstrate that Qarunian and Neolithic groups took fish at least two times during the year: late spring/early summer and in the late summer/early fall, periods that coincide with the seasonal low Nile and the post-flood maximum, respectively. Interestingly, Neolithic and Late Paleolithic Fayum inhabitants exploited the same wild terrestrial taxa in similar relative abundance, a fact that suggests both groups may have employed similar overall subsistence strategies (Brewer 1986; 1989; Caton-Thompson and Gardner 1934; Wendorf and Schild 1976; Wenke *et al.* 1983).

Research focusing on the Neolithic sites in the Fayum has provided additional information about prehistoric fishing practices. Although shallow water Clariidae (*Clarias* and a closely related but rarer genus *Heterobranchus*), were the predominant taxon recovered from early Neolithic sites, increasingly greater numbers of deep water taxa were found in later Neolithic sites (von den Driesch 1986), suggesting an increasingly proficient deep water fishing technology. This is particularly apparent with respect to increasing numbers of Nile perch (*Lates niloticus*), which prefer deep, well-oxygenated waters where they attain sizes in excess of 2 m in length and weigh more than 125 kg.

In the Delta, the site of Merimde, which contained Neolithic and Predynastic components, produced the most taxonomically diverse faunal assemblage recorded from Lower Egypt. Twenty separate piscine taxa, thirty-five avian and twenty-five mammalian taxa were identified. Pig was the most important domestic animal while the Clariids and other catfish (*Synodontis* and *Malapterurus*, respectively) were the predominant piscine taxa (von den Driesch and Boessneck 1985).

Evidence from other Neolithic and early Predynastic sites (Table 16.1) in the Nile Valley strengthen the established Delta pattern: that with increasing sedentism came an increasing reliance on domestic animals, but fish retained an important economic role. Unfortunately, the quality of reporting in all but a few cases lends itself to only the most superficial of conclusions. At Omari (fig. 16.1), although only the remains of *Clarias* and *Synodontis* have been reported, fish were clearly an impor-

tant protein source because of the great number of fishnet sinkers recovered from the site (Debono and Mortensen n.d.). The fish remains of Badari, although not subjected to analysis, did contain Nile perch (*Lates*) vertebrae and spines (Brunton and Caton-Thompson 1928). Evidence from Hierakonpolis indicates that with the onset of a more settled lifestyle, fishing became a year-round activity (Brewer 1991, and references cited there).

Fish resources and wild terrestrial resources followed different trajectories from Paleolithic through Dynastic times. As the ancient Egyptians developed an agriculturally-based economy and became more settled, wild terrestrial animals became increasingly less utilized, but the use of fish increased. Table 16.2 provides a summary for fishing in the prehistoric period. The Clariidae dominate in all sites and in many cases, particularly in the earlier Paleolithic sites, are the only taxon recovered. Although geography and differential preservation undoubtedly play a role in what taxa are represented, the overall trend appears to be one in which Egypt's prehistoric inhabitants moved away from the exploitation of a limited number of fish species to a more taxonomically diverse group with particular emphasis on those species that displayed a predictable seasonal behavior such as the migrating mullets. Additionally, fishing seems to have extended over longer periods of the year (Brewer 1991).

DOMESTIC RESOURCES

By the Predynastic period, cattle, sheep, goat and pig were the dominant sources of animal protein, and this reliance continued to grow through historic times. The ancient Egyptians continued, however, to utilize a variety of wild mammals, fish and fowl throughout their long history. The continued reliance on wild fauna, particularly fish and fowl, combined with the regularly flooding Nile, resulted in an economic schedule that strongly adhered to Egypt's seasonal cycles (Hassan 1984; Brewer 1987; 1992; 1994). Fig. 16.2 presents a reconstruction of one possible model for Upper Egypt's annual cycle of subsistence activities: Fishing, fowling, herding and agricultural activities were scheduled according to the predictable cycles of the Nile.

Unfortunately, few detailed faunal reports of Predynastic or Dynastic communities (as opposed to cemeteries) are available to support any model adequately, and the few habitation sites that have been exca-

Table 16.2. Piscine taxa recovered from prehistoric sites in Egypt.

Site	*Date (B.C.)*	*Taxon* 1	2	3	4	5	6	7	8	9	10	11
Idfu and Isna												
E71P101					x							
E71P1-2	(15,850 ± 330)					x						
E71P1-3	(15,000 ± 300)		x			x						
E71P1-6		x	x			x						
E71P2-T2						x						
E71K4-T4	(10,740 ± 240)					x						
E71K1	(16,070 ± 330)			x		x			x			
E71K3	(15,640 ± 300)			x		x			x			
71K9-A					x							
71K9-C					x							
71P7-A					x							
71P7-B					x							
E71K18-A					x							
E71K18-B					x							
E71K18-C					x							
E71K18-D					x							
E71K18-E					x							
E71K5					x							
Wadi Kubbanyia												
E78-2		x			x			x		x		
E78-3					x		x			x		
E78-4			x		x		x			x		
E78-9					x							
E81-1		x			x			x		x		
E81-3					x				x			
E81-4			x		x			x		x		
E82-3			x		x	x		x		x		
Fayum												
paleolithic												
S-2			x	x	x	x	x	x	x	x		
neolithic												
S-1	(3910 ± 115)			x		x	x	x	x		x	
S-3						x	x	x	x			
S-4			x	x		x	x	x	x			
S-5 (FS-1)			x	x	x	x	x	x	x	x		
Merimde (+)	(4311 ± 50)	x	x	x	x	x	x	x	x	x	x	x
Hierakonpolis												
HK29A				x		x	x	x	x	x		x

Key: x= presence of taxa,
1=*Labeo*, 2=*Barbus*, 3=*Bagrus*, 4=*Chrysichthys*, 5=*Clariids*, 6=*Synodontis*, 7=*Lates*, 8=*Tilapia*, 9=*Tetraodon*, 10=*Anguilla*, 11=Mormyridae.
+= *Polypterus, Hydrocynus, Alestes, Citharinus/Distichodus, Auchenoglanis, Eutropius, Schilbe, Malapterurus, Mugil.*
Alpha-numeric codes represent excavation labels.

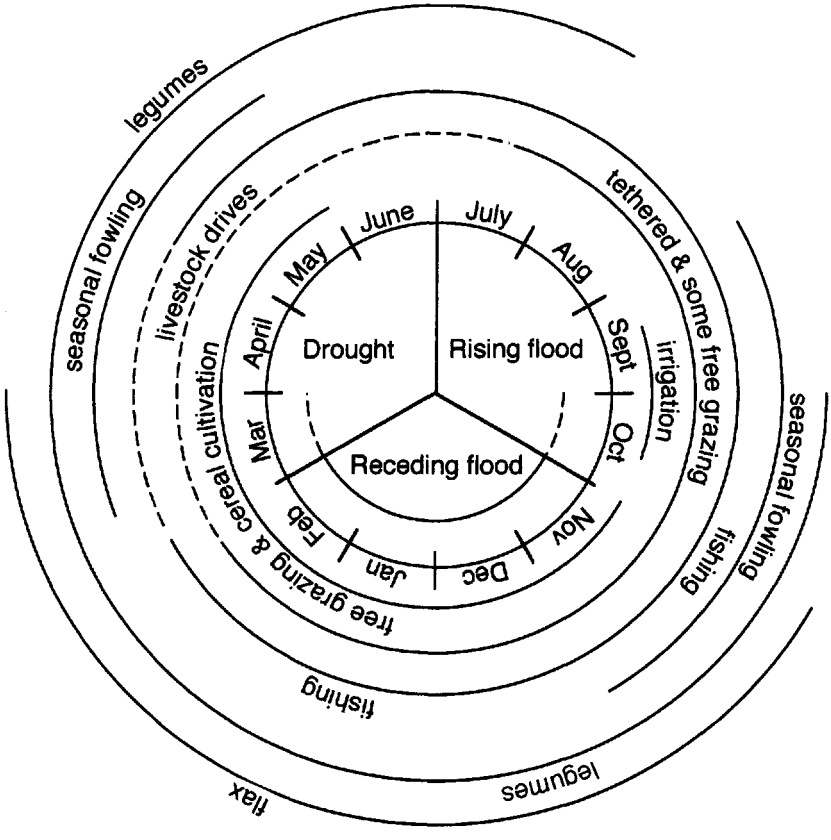

Fig. 16.2. Annual seasonal cycle and probable scheduling of subsistence activities.

vated have not been reported extensively. At Tell Ibrahim Awad and Kom el-Hisn, two well-reported Delta sites (fig. 16.1), a variety of domestic and wild animal species were recovered. At Tell Ibrahim Awad, a clear preference for domestic stock is evident in the Naqada II-cd period and this trend continues through the Old Kingdom. A similar pattern is inferred from Kom el-Hisn (Dynasties 5–6). At both sites the dominant species in the recovered faunal assemblage was pig followed by the herd animals, but fish remained an important resource (*Clarias* was the most abundant fish species recovered from the Tell Ibrahim Awad faunal assemblage; *Synodontis* was the most abundant fish species recovered from the Kom el-Hisn). Although few details are available for Upper Egypt, at Armont and Hememeih the bones of herd ani-

mals (cattle, sheep and goat), Nile perch (*Lates*) and catfish (*Clarias*) have been reported. Remains of herd animals and fish were also recovered from Maadi. Investigations at Predynastic Hierakonpolis (Naqada I), like other Predynastic sites, reveal a strong reliance on domesticates over riverine and desert fauna (Boessneck and von den Driesch 1988; Brunton 1937; Brunton and Caton-Thompson 1928; Hoffman 1984: 83; McArdle 1982; Menghin and Amer 1932: fig. 1; Mond *et al.* 1937; Wenke *et al.* 1988).

THE HERD ANIMALS OF DYNASTIC EGYPT

The ancient Egyptians classified herd animals into two groups: "large herd animals" implied *Bos* (bulls, cows, oxen), while "small herd animals" referred to goats, sheep and pigs. The small herd animals, more so than cattle, served the populace as a source of animal protein. Cattle did serve as food, but were also a symbol of status and wealth. Although owning herd animals of any kind was a mark of wealth, *Bos* possessed the greatest status. Evidence gleaned from ancient Egyptian texts suggest that a strong personal attachment existed between cattle and their keepers, and some cattle were even given names.

Egyptian Cattle (Bos)

The earliest undisputed evidence for domestic *Bos* (ca. 5000 B.C.) comes from Merimde and the Fayum. However, in Egypt's Western Desert, two bones believed to represent domestic cattle were recovered in context with materials dated to about 5500 to 6000 B.C. Bones also believed to be that of domestic *Bos* were associated with cultural materials from Bir Kiseiba and are thought to be as old as 8000 B.C. The argument for early domestication in the Western Desert is, however, built on ecological criteria rather than on the morphology of the recovered skeletal elements because it has been suggested that the environment was too arid to support wild *Bos*. (Wendorf and Schild 1980: 266; Wendorf *et al.* 1984: 5)

Saharan rock art and Egyptian tomb scenes provide interesting clues to the development of several Egyptian cattle breeds. For example, animals with long or lyriform horns are the predominant type depicted in Neolithic rock art (Muzzolini 1980) and may represent the earliest domestic form. By the New Kingdom (Table 16.1), four breeds of cattle

can be identified: a long-horn breed, a short-horn breed, a hornless variety and the zebu (Brahma). On the basis of iconographic evidence, long-horn cattle appear to be the earliest domestic form. They were slowly replaced by short-horn cattle, which became the predominant breed by the Second Intermediate period. This change could be the result of the importation of short-horned cattle or could reflect the morphological evolution of long-horned cattle. The zebu was introduced into Egypt during the New Kingdom and the hornless breed is depicted from the Old Kingdom through the Late period. Painted tomb scenes reveal the colors of the Egyptian cattle ranged from black, brown, brown and white, black and white, white spotted with black and pure white (Brewer *et al.* 1994: 84; see also Smith 1969: Bökönyi 1974; Gautier 1984: 69; Ruffer 1919; Zeuner 1963; Redford 1988: 10, pl. 31; Winkler 1938).

During the Old Kingdom the most frequently depicted *Bos* was the long-horned variety, called *ng'w*, which was tall and lean, with everted horns sometimes depicted as lyre-shaped, less frequently crescent-shaped. This bovid appeared heavily muscled, possessed a thick bison-like neck and a large muzzle. The *ng'w* appears to have been the working animal of choice. Representations of the *ng'w*, closely resemble the wild aurochs (*Bos primigenius*). Evidence of short-horned cattle (*wnḏw*) extends back to Dynasty 5, although it does not appear to have been a popular breed until the Hyksos period. Textual evidence suggests that a short-horned bovid was imported into Egypt from Syria, but a relationship with the Syrian cattle cannot be substantiated or refuted based on osteological evidence or archaeological association. The hornless breed (*ḥri ḏeʿ*), is known from at least the Old Kingdom. These cattle seem to have been valued as special cattle, but were not rare because Khafra-ankh was said to have 835 long-horned animals and no less than 220 of the hornless type (Smith 1969).

On the basis of anatomical drawings, draught animals were castrated (i.e., oxen), a practice that has an ancient history in Egypt and is mentioned in the Book of the Dead: "I have come and I have smitten for the emasculated beasts." It is also mentioned in a New Kingdom command to make preparations for Pharaoh's arrival: "oxen, five castrated, short-horned cattle of the west" (Budge 1949: 591; Caminos 1954; Smith 1969).

At least some cattle, and perhaps whole herds, were inspected and classified as to what their eventual use might be. By studying butchery scenes, it appears the Egyptians had special personnel to select beasts

for sacred and secular butchery, to direct the killings in accord with the sacred rites and to examine the flesh for any marks of disease or impurity. Scenes also show priest-physicians smelling blood to make pronouncements on its purity (Montet 1985; Vandier 1952; Brewer *et al.* 1994). Herodotus (II.38) describes one example of such an inspection: "They [the priests] ... test them thus to see if there be as much as one black hair on them: if there be, the bull is deemed not pure; one of the priests ... examines the beast making it stand and to lie, and drawing out its tongue, to know whether it bear none of the stated signs which I shall declare hereafter .... If it be pure in all these respects, the priest marks it by wrapping papyrus round the horns, then smears it with sealing earth, and stamps it with his ring; and after this they lead the bull away. But the penalty is death for sacrificing a bull that the priest has not marked." Only "chosen" bulls and calves were used in sacrifice; cows were not traditionally offered, but were used for breeding and milk production.

The earliest firm evidence for the use of cattle as providers of milk comes from Egypt and Mesopotamia and dates to the fourth millennium B.C. (Tannahil 1973: 41). Cows being milked and nursing calves were frequently depicted throughout the Dynastic period, and artists often showed regard for the cows' feelings. In many scenes the cow is shown looking back or shedding tears at the removal of her milk while the calf is denied its meal (fig. 16.3). Peet and Woolley (1923) described a series of sticks recovered from their excavations at Amarna that were thought to be used as a muzzle to prevent calves from drinking their mothers' milk (see also Williams n.d.).

If the animal was to be raised for meat, the quality of the beef could be altered by regulating its feeding habits, exercise and quality of life. The *iw'* bull, for instance, seems to have been fattened and nurtured for a special purpose, perhaps as a sacrificial offering: They are shown as being exceedingly fat, sitting low on their haunches and having pendulous bellies. Sacrificial bulls appear in relief on Akhenaten's *Rwd-mnw* Temple at Thebes. There, a scene depicts an enormous bull being pulled in a cart while being force-fed: The bull's hooves are overgrown and turned upward, suggesting a sedentary life. Sacrificial bulls are also shown in the jubilee reliefs of Ramesses II at Luxor Temple. Their everted horns are indicative of the *ng'w* breed, but their particular lifestyle has given them a distinctly obese form. Such an inactive lifestyle undoubtedly left them muscularly weak and unstable.

Butchering cattle and wild game was a common motif in Egyptian

Fig. 16.3. Relief depicting a protesting long-horned cow being restrained with a rope and milked by two peasants. From the tomb chapel of the mastaba of the vizier Kagemni at Saqqara. 6th dynasty. Photo courtesy Patrick F. Houlihan.

art from all periods and provinces. Cattle were slain by cutting their throats with a knife (fig. 16.4). After the animal was bled, it was skinned, disemboweled and then dismembered. Select pieces were presented as offerings or sold as filets or joints in meat shops. Representations of butchers in association with meat shops are known from the Old Middle and New Kingdoms. Brains too were eaten. Moustafa (1964) noted that cattle skulls recovered from a Dynasty 26 animal cemetery were split along the median (basio-cranial) axis, apparently to permit access to the brains. Numerous medical prescriptions also utilized diverse parts of the animal.

Montet (1985: 89) was probably correct in stating that consumption of beef was in general limited to the upper classes of Egyptian society, namely the large landholders, priests and royalty. The eating of beef by peasants most likely took place only during special feasts. The meat most commonly eaten by the peasant class was the smaller, less expensive taxa such as sheep, goat, pig, fowl and fish. This was probably a result of economics rather than social or religious restriction. There are no known proscriptions against eating beef, but Herodotus pointed out that cows (i.e., females) were not eaten because they were identified with Isis. Equally important, economic issues also limited cow consumption in that they were providers of milk and the progenitors of future generations.

Despite considerable evidence relating to all aspects of cattle raising and butchering, little is known about the preparation of beef for ancient meals. One might expect roasted beef to have been the most common method of preparation, given the many scenes showing Egyptians roasting fowl, but representations of roasted beef are difficult to find. (One example of roasting beef is in the Tomb of Ukh-hotp, son of Ukh-hotp at Meir.) The cooking method most commonly employed seems to have been boiling (Brewer *et al.* 1994: 89; Darby *et al.* 1977).

Sheep and Goats

Sheep and goats were introduced into Egypt from southwest Asia sometime prior to 5000 B.C. The earliest undisputed evidence comes, once again, from the Fayum and Merimde.

The ancient Egyptian goat appears to be similar to those recovered from Jericho and other Neolithic sites of the Near East, but are somewhat larger. The Egyptian goat was long-legged, short-haired and had a long face with a straight nose. Drooping ears were common in the

Fig. 16.4. Painted limestone relief of a pair of butchers cutting up a large, bound, sacrificial steer. The left foreleg of the slaughtered animal is tied securely to both its hind legs, and the men of busy slicing off the right foreleg. A third butcher stands just to the left sharpening his knife on a whetstone attached to his belt. From the tomb chapel of the mastaba of the princess Idut at Saqqara. 6th dynasty. Photo courtesy Patrick F. Houlihan.

Old Kingdom, but in later periods an erect eared form became prominent. Scimitar-horned goats appear to have existed in Old Kingdom times, but by the Hyksos period (ca. 1663 to 1555 B.C.) they had become rare: the predominant type possessed a twisted, or "corkscrew" horn. Goats ranged from solid-colored to piebald. The modern goat of Egypt, with its convex nose, drooping ears and long hair, is not a descendant of these ancient breeds, but is a more recent introduction (Brewer *et al.* 1994: Zeuner 1963: 140 and n. 1).

Goats were kept for their meat, skin and perhaps milk, and less importantly for their hair. Tomb illustrations depict only short-haired varieties that would not have been good suppliers of wool. On the basis of the number of sheep and goat bones recovered from archaeological sites, mutton and goat were common dishes for the peasant and working class and goat skin was used to produce a diverse number of leather objects.

On the basis of a comparison of illustrations, Egypt possessed in succession two different races of sheep that are only once depicted together. Until the Middle Kingdom there was a hairy, thin-tailed breed with crescent-shaped horns extending laterally from the head. This hairy sheep was kept mainly for its meat, milk and hide. By the Middle Kingdom a second breed became prominent. It possessed a shorter, thicker tail and recurved horns, and its kemp (bristly outer hairs) was woolier than the Old Kingdom breed and it grew year round; the earlier breeds would molt in spring. Because the wool of the new breed was well-suited to spinning and weaving, woolen fabrics became more prominent in later periods. Interestingly, shears have not been recovered from before the Third Intermediate period; wool was evidently plucked or cut with a knife (Clutton-Brock 1987; Darby *et al.* 1977; Zeuner 1963; Janssen and Janssen 1989).

Swine

According to Herodotus (II.47), ancient Egyptians regarded pigs as unclean, and they were therefore underutilized. Based on textual and iconographic evidence, Herodotus' statements appear true; pigs are seldom depicted in Egyptian art or specifically mentioned in texts (see also chapter 3). Nevertheless, the pig was an important and early domesticate in Egypt (ca. 4800 B.C.). The Egyptian pig was long-legged, bristly and resembled the wild boar more than modern breeds. Excavations throughout Egypt have unearthed pig bones at most if not all settle-

ment sites (as opposed to mortuary or temple sites), and they seem particularly abundant in areas associated with working class or peasant-related activities (Brewer *et al.* 1994 and references cited there).

The physical stature of the pig, its preferred habitat, and its uncompromising personality make it an unlikely candidate for herding over great distances. It is indeed difficult to imagine how a nomadic community or even a semi-sedentary group could cope with pig-drives, given that the animal is notoriously unaccommodating in this respect. The pig was, therefore, more valuable to the settled villagers of Egypt. In fact, the pig filled an open domestic niche in that it complemented cattle, sheep and goats by eating what they did not: roots, tubers and village garbage. Additionally, by rooting they helped turn the soil and produced conditions conducive to grass growth (Zeuner 1963).

The Neolithic and Predynastic peoples of Merimde consumed great quantities of pork, as revealed by thousands of pig bones, and at Predynastic Helwan pork was also consumed. Indeed, several archaeologists have concluded that pork consumption was a mainstay of early Delta culture. Although it is difficult to assess morphologically whether these early remains came from hunted or domestic animals, the sheer number of bones recovered and their relative frequency compared to sheep, goat and cattle, ranging from the first to third most abundant animal at each site, strongly suggests that they were domestic animals (Hayes 1964: 71; Wenke *et al.* 1983; Caton-Thompson and Gardner 1934; von den Driesch and Boessneck 1985).

Table 16.3 lists the number of identified skeletal elements per taxon for a series of well-published assemblages from the Delta, Giza and Hierakonpolis. Interestingly, the relative abundance of pig bones shifts from being the predominant taxon encountered to that of a lesser status out of the Delta. This perceived shift away from pig as the main source of domestic animal protein probably reflects available habitat—the Delta offering the most hospitable environment for raising pigs—but cultural biases cannot be totally discounted.

The chief role of the pig was as a source of meat and fat. Pigs are well-suited for this role because they produce two litters a year, are comparatively long-lived and mature within a year. Their ability to adapt to different environments allows them to range freely and root in the village or be confined to the home or sty. Because pigs can accommodate themselves to a number of eating and sleeping schedules, they can be managed quite easily in close quarters. This versatility offers a unique

Table 16.3. Identified domestic elements from five well-published sites.

Taxon	Site				
	Merimde	Maadi	Kom el-Hisn	Ibrahim Awad	Hierakonpolis
Dog	508	31	12	1	34
Pig	6568	398	397	112	140
Sheep	840	62	0	13	111
Goat	38	32	0	1	136
Sheep/Goat	5185	1144	311	7	900
Ass	0	20	41	0	5
Cow	3575	311	14	76	851

advantage over other domesticates, particularly in densely populated areas.

The most important discovery relating to hog-farming is the discovery at the New Kingdom Amarna workmen's village of a rather sophisticated pig farm. The animals had been born and raised in specially constructed pens. The pigs were apparently fed grain and most of the animals had been slaughtered in their first or second year of life. The butchering, salting and packing of meat in pottery jars had been done in special areas coated with white gypsum. The relative care and degree of organization devoted to the farm imply that it was more than a sideline run by some of the villagers for personal use; rather, it appears to have been a substantial business endeavor (Kemp 1991: 256).

Unfortunately, there is little information about swine during the earlier Old and Middle Kingdom. However, one noble, Menthusweser, who lived during the reign of King Senusret I, held the title "Overseer of Swine." Also, in the Middle Kingdom tomb of Khety at Beni Hasan, there is a painting of ambiguous "marsh animals" that bear a strong resemblance to swine. By New Kingdom times, references to swine are more frequent, and a passage in the Book of Gates clearly shows a monkey driving a pig. A record from the tomb of Reni describes a herd of swine numbering 1,500 and some New Kingdom kings offered gifts of swine to temples. Amenhotep III, for example, offered one hundred adults and one thousand piglets to the temple of Ptah at Memphis; Seti I allowed pigs to be raised inside the temple consecrated to Osiris at Abydos. Paheri, a noble buried at El Kab, had artists portray scenes of swine under the care of a herdsman (Newberry 1928: 211; Sethe 1906: 4:75:1; Kees 1977: 92).

Why pork held such a lowly status in Egypt compared to other animals is curious. Although pigs are featured in a few tombs, their bones have never been found in a tomb nor is pork featured in temple offerings. That some restrictions against pork existed does, consequently, seem likely (cf. chapter 3). The most common assumption is that trichinosis was a concern, but the cause and effect relationship between pork and the parasitic infection is not direct. There are numerous other plants and animals for which no taboo existed, but whose effects are more directly observable than trichinosis. In fact, the relationship between ingestion of under cooked pork and trichinosis was not even established until 1846 (Leidy 1846). On the other hand, as with fish, restrictions on pork might have been limited to certain classes or to certain periods of the year. Furthermore, according to some traditions the god Min, a widely accepted deity of fertility, was born of a white sow: providing the possibility of a local religious restriction. There is also the possibility that such a restriction extended to other areas and times. In Dynasty 4, for example, the Meidum region was know as the "Domain of the White Sow" (Janssen and Janssen 1989; Ruffer 1919; Brewer and Friedman 1989; Petrie *et al.* 1903: 25; Newberry 1928: 214; Jackquet-Gordon 1962: 466; Ebbell 1937: xcv, 814).

HERDING

The value of ruminants (cud-chewing animals) such as cattle, sheep and goats is that they are able to transfer otherwise unusable plants into edible products, which takes on added significance where grazing lands are unsuitable for maintaining crops. In Egypt, grasses grew in a variety of areas and, depending on the availability of water, could be tall and lush or sparse, dry and stunted. Fallow fields also offered forage for ruminants, who in turn provided a direct application of fertilizer. The productivity of grazing lands, however, would have varied from year to year due to the vagaries of Egypt's rainfall, the reluctance to irrigate fields not devoted to cash or food crops and the planting/fallow schedule of given plots. Consequently, a grazing strategy would have to evolve that would acceptably counter the local constraints and provide a satisfactory level of success with a minimal or acceptable incidence of failure.

To ensure success, ancient Egyptians, like modern herders of East Africa and the Sudan, emphasized large herds. Although it could be

argued that Egyptian herds were large because of the status attributed to owning livestock, large herds do make evolutionary sense under certain conditions. Large herds are a means of ensuring the survival of at least some animals even after a disastrous environmental or disease-invoked tragedy. The ancient Egyptians fully realized that a certain percentage of the herd would die each year, but in a bad year a herdsmen who lost one-third of his stock was better off beginning with sixty animals than with six. Clearly, for rapid replenishment of a herd, the large herd philosophy works well (Brewer *et al.* 1994: 79).

Another important aspect of the large herd philosophy is that when the availability of food is threatened by catastrophe, that catastrophe will affect all agricultural products. A large herd would provide immediate food for the populace as well as leave enough stock to propagate a new herd. A diversified herd incorporating sheep, goat and cattle would serve as an additional safeguard. Each species thrives under different environmental conditions and has different selective tolerances. Goats are browsers and do not compete with sheep and cattle for food and are more drought tolerant than either. Cattle and sheep are grazers, but sheep are more drought tolerant than cattle. Given an environmental crisis, the three herd animals will have different probabilities for survival depending on the nature of the problem. Also, because sheep and goat reproduce more rapidly than cattle, their herds can recover more quickly. Thus, although the Egyptian herding system would appear to be a pretentious one overemphasizing herd numbers, there is evidence to suggest that large herd sizes actually represent an adaptive response to environmental uncertainties.

Because Egyptian herds were large and, over time, population and agriculture impinged on available grazing lands, a mixed system of penned animal raising and range herding became established throughout the Nile Valley. Although a common theme in Old Kingdom tomb scenes shows tethered cattle being fed grain or bread dough, this would have served only as a healthy dietary supplement for a chosen few. It would not have been economically feasible as fodder to Egypt's vast herds, particularly when it would have, ultimately, put the herd in direct competition with humans for the same foodstuffs. Consequently, during the unproductive dry season of the year, herds were driven to better pasture. There is evidence that the ancient Egyptian herdsmen drove their herds to the less populated marsh lands of the north (Helck 1975: 15–16).

During the drive, herdsmen lived off the land and like the cowboys

of the American Old West, some probably had no permanent home. Rather, they lived in reed huts that could be built with little effort. Personal possessions were minimal, limited to a few vessels and papyrus mats; their personal hygiene was always depicted as being somewhat wanting. On the basis of tomb inscriptions, it can be inferred that some of the herdsmen accompanying the cattle to pasture represented the owner's interests. These herdsmen seem not to have delighted in the romance of the drive. From textual evidence it seems they longed for the comforts of home, and it was a joyful day when they came "out of the north country and drove their cattle upwards" (Erman 1971: 440).

Once the herd returned home, scribes inspected the accounts of the herdsmen to determine how many head of each breed and class had returned. A written accounting of the herd also had to be presented to the estate owner: 835 long-horned cattle, 220 hornless cattle, 760 donkeys, 974 sheep and 2,234 goats. Government officials from the office of the "Overseer of Cattle" might also visit the herd to levy taxes. Such taxes were attached to living cattle as well as products such as hides. These periodic inspections possibly served to verify the growth (or loss) of wealth of the estate and ultimately the wealth of Egypt itself (Erman 1971: 441; Kees 1977; Winlock 1955).

Good herdsmen, although depicted as humorously unsophisticated, were valued and had many and varied responsibilities. They were responsible for most of the day to day care of the animals under their charge. It was their job to see that food for the herd was plentiful and properly balanced. From tomb scenes it is clear that Egyptian herdsmen were aware of fundamental breeding practices and understood how to assist in calving. For serious ailments, however, specialists could be called upon. A section of the Kahun gynecological papyrus, which deals with diseases of cattle, makes it evident that some physicians possessed veterinary skills. For example, many priests of the goddess Sekhmet were medical physicians (*swnw*) but also "knew cattle"; others, although not physicians, also "knew oxen." (Griffith 1898; Ghalioungui and Dawakhly 1965: 13).

Being responsible for the cattle under their charge, herdsmen needed some means of identifying them. One means suggested by Moustafa, who excavated a Dynasty 26 (655 to 630 B.C.) animal cemetery, was to etch or mark the horns of the cattle. Moustafa (1964) noted that a remarkably large number of horns of all sizes had been treated in this manner. He suggested that these may have served as markers to distinguish individual cattle or the herd owner, although he could not ex-

clude the possibility of other interpretations. A number of tomb scenes also depict cattle with one horn bent downward. Although there is no explanation as to why this might have been done, the modern Dinka of the Sudan bend the horns of their cattle by filing or deeply incising one side of a horn, which causes the horn to grow in the direction of the incision (Brewer *et al.* 1994: 87).

Branding (*ꜣbw*), a more effective means of identification, was probably practiced on large estates of the crown and temples. Branding scenes are known from several Theban tombs (Kenamunt, Netererhotep and Neferhotep) and the Papyrus Varzy tells of a man apparently involved in cattle stealing who placed his own brand over the brand of the true owner (Darby *et al.* 1977: 109; Gardiner 1948: 59–60).

BEASTS OF BURDEN

The Egyptians principally employed two animals as beasts of burden: the ox, which served as the draught animal in agricultural pursuits, and the donkey, which was used for transporting goods. The horse, although its remains date to the Middle Kingdom (Buhen in Nubia), was not common in Egypt until late in the Second Intermediate period, when it was adopted for chariot warfare. The camel, although its remains have been recovered from a First Dynasty cemetery (Helwan), did not serve as a beast of burden until Roman times.

The Egyptian word for donkey was *cꜣ* (eeyor), a name based on the creature's less than melodious cry. The same word frequently occurs with the connotation "ass-load," a term no doubt reflecting the primary function of the donkey as a beast of burden, but also used as a vague measure of quantity for bulky and relatively cheap goods. Numerous tomb scenes portray donkeys laden with agricultural goods from the fields and prior to the introduction of the camel, trading caravans composed of donkeys voyaged between Egypt, Arabia, the Levant and sub-Saharan Africa. During Dynasty 6, Herkhug, the caravan master of King Meren-Re returned from his third journey to Yam with three hundred asses laden with incense, ebony and grain.

Like oxen and sheep, the donkey was also employed for threshing, but it seems that donkeys were seldom used for plowing. It is likely that ordinary Egyptians rode donkey-back, although only foreigners are shown riding (astride) donkeys. Three Old Kingdom reliefs show the tomb owner riding in an elaborate chair suspended over the back of

two donkeys and two New Kingdom texts refer to donkeys pulling a chariot (Epstein 1971: 393; Zeuner 1963; Hassan 1988: 158; Breasted 1988, I: 336).

To meet the demand for this valuable work animal it is entirely possible that systematic donkey breeding was undertaken as early as the Old Kingdom. Large herds of donkeys are suggestive of just such a practice. For example, a Dynasty 4 scribe notes a land owner with well over 760 asses. Surprisingly, even though a common animal, the purchase price of an average donkey was quite high, about the price of a cow, making it too expensive for most peasants, but it was a good investment for those who could afford it. Although they are notoriously stubborn and single-minded, donkeys are easy to maintain, able to survive on relatively little water and poor forage and are capable of working for as many as forty years (Janssen and Janssen 1989).

For all the donkey offered, it is ironic to find that it was the butt of jokes and insults. When the Egyptians wanted to show their contempt for the Persian ruler Ochus, they called him "the ass," to which he responded by slaughtering and eating the Apis bull. That donkeys were sometimes mistreated is evident from a text from Deir el-Medina relating how a donkey fell ill from being beaten and having to carry too many people. Such treatment was not considered appropriate, however, and many sources record owners caring for their sick donkeys (Janssen and Janssen 1989; Plutarch V:361.31).

The horse was adopted in Egypt sometime after the Hyksos invasion. There is little evidence, written or archaeological, for the presence of the domesticated horse in Egypt before ca. 1800 B.C. The earliest representations of horses appear at the beginning of Dynasty 18. The earliest literary evidence comes from texts (ca. 1580 B.C.) referring to the "war of liberation" from the Hyksos, and the earliest skeletal remains date to the Middle Kingdom fortress at Buhen. Microscopic studies of the animal's teeth suggest, however, that it was controlled with a bit, a practice that postdates the Middle Kingdom.

An Asiatic introduction for the horse is reinforced by several terms for horse and chariot borrowed directly from west Semitic dialects. Regrettably, no evidence has been recovered related to horse training. The Egyptians more than likely based their handling practices on the established skills of Asiatics (Emery 1960; Clutton-Brock 1974; Hock 1991; Clark 1941; Anthony and Brown 1989: 112–13; Drower 1969).

The ancient word for horse was "*htr*" meaning "yoked animal." Ancient Egyptian horses were fairly small. The adult horse skeleton recov-

ered from Buhen measured only 125 cm high at the shoulders. The Buhen horse, however, may have been somewhat smaller than the average. On the basis of the yoke measurements of surviving chariots, average shoulder height of an Egyptian horse was closer to 135 cm. This compares fairly well to some historic Bedouin horses, but is smaller than the average Arabian.

The ideal horse, based on those produced through systematic breeding, was elegant and swift with a long body and slender legs; speed rather than power clearly was the main objective. Although horse breeding was known in Egypt, it was never a very successful endeavor and most animals were imported, either by trade or as spoils of war, from Syria or elsewhere. The Karnak annals, listing booty captured by Tuthmosis III at Megiddo, specify 2,041 horses, 191 young animals, male and female, six stallions and a number of foals (Janssen and Janssen 1989: 36–43; Nibbi 1979; Chard 1937; Wiesner 1939; Reinhardt 1912).

Horseback riding does not seem to have been commonly practiced in Egypt and only a few scenes show mounted horsemen (see also chapter 3). In most cases the scenes represent foreigners, but at least two cases show Egyptians. In both cases, however, the riders were horse groomers. On the basis of textual evidence, riding horseback might have been regarded as undignified. Prince Tefnakhte of Sais (Dynasty 25) is described fleeing from his conqueror mounted on his horse, having never asked for his chariot. Apparently, this was thought to be a less than noble retreat.

Although the upper classes may have possessed some horses, most seem to have been state property. Apart from breaking and training, horses were invariably confined to stables where they received daily rations of grass and forage. A letter relates how "the horse teams of my lord are well: I have their allotted measure mixed before them, and their grooms bring the best grass from the marshes. I assign grass to them daily and give ointment to rub them every month, and their chiefs of the stable trot them every ten days." The state barracks excavated at Amarna were designed to house up to two hundred animals. The chariots here played a role in the Household Brigade, as an honor guard and as police (Janssen and Janssen 1989: 42).

HOUSEHOLD PETS

Cats and dogs were popular pets in ancient Egypt and both made working contributions to society. The domestic cat has a long history in the Nile Valley and may have evolved there in concordance with the rise of an agricultural economy. Its primary role was mousing, which is an important function in any farming community. Outside of this role, cats served as pets and are often portrayed in fowling scenes. Contrary to some sources, cats were probably not trained to retrieve stunned birds, although some cats do display an innate retrieving behavior. Rather, if present at all during such hunts, the cat's natural stalking instincts or simply their presence were more than likely used to flush fowl for the hunter. The most likely explanation for the presence of cats in such scenes is that they were considered part of the household and thus shown in the company of family members.

The cat as a pet was, as in today's society, much loved; at death cats were sometimes buried with full ritual as if they were humans. A small Dynasty 12 pyramidal tomb at Abydos provides an excellent example, for it contained a cruciform chamber housing seventeen cat skeletons. The excavator (Petrie 1903) postulated that a row of rough little pots in small recesses once contained milk, thus representing a rare example of a funerary offering to an animal. More elaborate still is an Amarna sarcophagus that had been fashioned for a beloved pet. The offering formula describes the cat as "Osiris, the Lady Cat," and it is depicted sitting next to an offering table with a feline-headed shwabti, just as if the cat were a deceased member of the family (Janssen and Janssen 1989; Malek, 1993). In the Late period, Herodotus (II.66) related that when a cat died, the owners shaved their eyebrows and transported their pet to Bubastis, the city of the cat goddess Bastet, for burial.

Dogs probably entered Egypt via the same eastern path as the early domestic ungulates, and their earliest appearance is concordant with that of herding animals. The first physical evidence of dogs in Egypt comes from Merimde (ca. 4800 B.C.). There has been no verified claim for the presence of dogs in the Neolithic Fayum or Badari.

Pictorially, the earliest datable representations of the dog come from Neolithic rock art of the Western and Eastern Deserts, in which dogs are shown accompanied by human figures, cattle, giraffes and antelope. Winkler (1938) classified the rock art of the Eastern and Western Deserts into a series of basic styles. The earliest group, the western hunters, depicted dogs that look much like the dogs found today among

Berber peoples: in the drawings they have long bodies, long legs, pricked ears and tails carried high over the back. The rock drawings of the early western hunters are followed by scenes representing primarily pastoral activities or boats. These scenes seem to suggest three types of dogs: a rather large form similar to the dog represented with the early hunters, a prick-eared greyhound type and a smaller, stockier dog possessing a short neck, short legs, long pricked ears and a straight tail (Winkler 1938; Epstein 1971; Schweinfurth 1912).

On the basis of a collection of skulls of mummified dogs from Abydos, Thebes and Asyut, Hauck (1941) derived three major types of dogs that compare closely with those identified from Winkler's study of rock art: a large and small dog resembling Winkler's "early hunter dog"; a medium, small and dwarfed Pomeranian-like dog; and a small and large greyhound-type dog. Hilzheimer (1908) noted that the majority of dog skulls he examined were large and small dogs of the "early hunter" type.

That two independent sources of evidence (pictorial and skeletal) support the presence of separate canid forms implies that by Dynastic times different breeds, perhaps maintained for different purposes, had become established: (a) a greyhound type dog; (b) a more ubiquitous "mutt," which may have been represented by a small and large form; and c) a hound. Although it is possible that these forms represent points along a continuum of canid shapes and sizes, the frequency of representation in skeletal and artistic samples lends support to the development of an ideal canid form, possibly representing rudimentary breeds.

The earliest record of a greyhound-type dog in Egypt is found on an Amration bowl. The greyhound is generally characterized by a long, narrow muzzle, nearly straight facial profile, slender body, long neck and limbs and its habit of hunting by sight rather than by smell. The Egyptian dog, shown in innumerable Old Kingdom scenes, possessed a curved tail, pricked ears, deep chest and narrow waist. It is the earliest breed resembling the modern family of sight-hounds. A similar dog is depicted in the rock drawings of the early pastoral peoples in the Eastern and Western Deserts, and prick-eared sight-hounds are shown in rock art of the Atlas countries. The range of the Egyptian greyhound-type dog thus must have extended across much of North Africa (Tobler 1950: pl. 37b; Frankfort 1939: pl. IVa; Hilzheimer 1932; Winkler 1938).

During the Dynastic period, this Old Kingdom greyhound was repeatedly imported into Egypt from Nubia and the Land of Punt (near

Somalia), which may have been an early breeding center. Whether the original parent stock from which the Egyptian breed evolved was indigenous to East Africa or introduced from western Asia is still uncertain, although the recovery of skeletal remains of an Old Kingdom greyhound-like canid from the Ubaid period in Mesopotamia tends to favor the latter alternative (Clark 1954; Epstein 1971).

Comparing representations from the Late Predynastic period to the Dynastic shows a change in the characteristics of the ideal Old Kingdom dog. The thick body and tail of the Predynastic form is replaced by a smooth curved tail, erect ears and a more gracile body, and in the later dynasties, the long pricked ears give way to drooping ears similar to those of modern greyhounds and salukis (Przedziecki 1954).

There is some evidence that hounds made an appearance in Egypt near the end of the Predynastic period. It is, of course, difficult to separate greyhound representations from the bulkier, thicker hound because they possess similar identifying features and only vary in body proportions. Perhaps the best evidence is the condition of brachymely, a common mutation in which the legs of the dog are quite short, depicted in several Middle Kingdom tombs at Beni Hasan (Brewer *et al.* 1994). Skeletal and pictorial evidence also supply supportive data for the presence of hounds: Hilzheimer (1908) reported two skulls from Asyut that possessed the short, broad skull dimensions of a hound.

Although there is substantial pictorial evidence for the existence possible breed standards in Egypt, most dogs were mutts, whose genetic background was the product of continuous indiscriminate breeding between any number of domestic forms. In fact most of the dogs living in Egypt at any one time were probably pariahs living on the fringes of society that were very likely despised by the ancient villagers, an attitude that persists to this day. Conversely, numerous tomb scenes show that pets and hunting dogs were much loved. A New Kingdom scribal instruction states: "The dog obeys the word and walks behind its master." The pet dog also stood as a symbol of the faithful retainer. One Middle Kingdom official described himself as "a dog who sleeps in the tent, a hound of the bed, whom his mistress loves." (Janssen and Janssen 1989: 11). It is not surprising then that dogs had individual names—nearly eighty have been recorded. The names refer to color (Blacky, Ebony), character (Good Herdsman, Reliable or Brave One) and to qualities such as speed (North Wind, Antelope). Foreign names for dogs also appear; many are thought to be Berber and some perhaps Nubian in origin (Breasted 1988, IV: 421).

Aside from their role as pets, dogs served as watch and police dogs. A Middle Kingdom stele belonging to a member of the desert police testifies that he patrolled the Western Desert in search of fugitives. He was subsequently promoted for his loyal service, in which he was assisted by five dogs; their names were inscribed next to his (Janssen and Janssen 1989: 11).

As a testimony of the Egyptians love for their dogs, dogs were often buried with human-like care. Dogs were provided with individual coffins bearing their own inscriptions. One Old Kingdom stele mentions a royal guard dog, Abutiu (with pointed ears[?]), which kept watch over his master. The dog was ordered by Pharaoh to be buried, a sarcophagus was made for him and he was wrapped in fine cloth dusted with incense and scented oil. Pharaoh also had a tomb constructed for his pet. Such special devotion may have been an exception, although erecting a stele over an interred dog was not atypical (Janssen and Janssen 1989: 12–13).

Evidence for eating dog is confined to one single incident, which was a case of religious vengeance. Plutarch (V:380.72) stated that "in my day the people of Oxyrhynchus caught a dog and sacrificed it and ate it up as if it had been sacrificial meat because the people of Cynopolis (dog city) were eating the fish known as the Oxyrhynchus (*Mormyrus* sp.)." As a result, they became involved in a war and "inflicted much harm upon each other," and it took the Roman army to quell the disturbance.

APICULTURE

The origin of beekeeping is still a mystery, but the Egyptians were one of the earliest cultures known to keep bees and may have pioneered ancient apiculture. As early as Dynasty 5, a bas relief in the Chamber of the Seasons of Niuserre's solar temple at Abu Gurob clearly shows a man kneeling in front of a pile of cylindrical vessels and holding one to his mouth, exhaling or breathing (*nft*) into it. This has been interpreted as "blowing" smoke into the hive or as possibly imitating the call of a "queen," as beekeepers in Egypt today do to draw out the bees and access the honey. It seems likely that calling and smoking techniques were used to extract bees given existing scenes and texts. In the Leyden Papyrus, for example, is the phrase "they (the bees) are called with a flute" (Fraser 1951; Kuény 1950; Pellett 1946: 1).

The presence of royal or state-controlled hives by Middle Kingdom times is suggested by the titles of a man named Intet, "Nomarch, Royal Acquaintance, and Overseer of Beekeepers," and another Middle Kingdom title "Overseer of Beekeepers of the Entire Land." By the Ptolemaic period, royal and private bee farms are known to have existed (Martin 1971: 234).

THE MENAGERIE

Although an endless variety of birds and mammals were "tamed" for religious and secular purposes (ostriches, ibex, and gazelle, for example), and exotic pets seem to have been a fashionable item of the upper class, these animals remained genetically wild (see also chapter 3).

The Egyptian Nile offered an excellent haven for migrating birds; thousands of ducks, waders and many other groups could be found wintering in Egypt. Approximately seventy-five avian taxa have been identified in Egyptian art, and more than 450 taxa have been identified as living in Egypt.

Although the Egyptians were exceptionally fond of dining on fowl, only two forms were clearly domesticated, the greylag and the white-fronted goose. Many bird species, however, are depicted in aviaries and pens and may have been tamed. Such poultry yards are a common motif in Old Kingdom reliefs, and even modest peasant dwellings contained poultry yards and aviaries. One account of a poultry yard held by the estate of Amun recorded 23,530 poultry keepers who each were in charge of 34,230 birds for an estate total of 771,201,900 (Kitchen 1999). Poultry cages were illustrated as large structures filled with ibis, cranes, ducks, geese and pigeons. Sometimes species were isolated from one another; in other cases, the different species were allowed to roam freely within the enclosed area. Penned birds were fed by scattering grain inside the enclosure, but some cranes and geese were hand or force-fed, possibly to fatten them or to enlarge their livers for the production of *foie gras*, which has been documented in the Roman period. The few surviving prices for birds indicate that their value was lower than a simple basket, and barely higher than a small loaf of flat round bread (Moreau 1966; Meinertzhagen 1930: I:68; Darby *et al.* 1977: 273; Mackworth-Praed and Grant 1952).

It is likely that most of the birds presented in the poultry yards were captured during the yearly migrations. The wild bird resources of Egypt

were so large that widespread domestication of birds simply may not have been as efficient as hunting and trapping. Ancient fowling was undertaken with nets that encased a given tree or habitat, trapping the birds within. Small clap-nets (fig. 16.5), arrows and boomerangs were also used to hunt birds. Given the tremendous numbers it is easy to see how some species were eventually extirpated from Egypt because of over exploitation. The ibis serves as one important example. It was captured on a massive scale, and finally bred to meet the growing demand for the pilgrim industry. When these religious beliefs fell out of favor and the habitat of the ibis was reduced through agriculture and industrialization, the species became locally extinct.

There is also evidence from the Dynastic period that in addition to birds, large numbers of wild animals were held captive in what could be described as a royal menagerie. One such example was that of King Amenhotep III (1386 to 1349 B.C.), who had animals enclosed and roaming freely within a 300 × 600 m fenced area (Janssen and Janssen 1989). The captive animals served a variety of religious and secular purposes.

Lions as well as other great cats were a favorite companion of kings and nobles and are often shown accompanying the king on the hunt. Hunting particularly dangerous animals such as the hippo and the lion became a royal prerogative, but one that also held symbolic significance. Artistic scenes depicting the king (or noble) harpooning a hippopotamus, for example, are thought to represent the ruler's triumph over chaos. The hunting of feral or wild cattle was also a favorite sport throughout the Dynastic period. The art of roping and throwing a wild (or feral) bull is also depicted in tomb scenes in a variety of Old Kingdom mastaba tombs (for example, Ti and Mereruka). Wild bulls are also shown being shot with arrows, lassoed and dispatched with an axe, as shown in a scene from Beni Hasan.

Although a number of scenes depict monkeys or the larger, stockier and more aggressive baboon, there is no conclusive evidence that these animals were domesticated in the sense that they underwent specific genetic changes as a result of human control. Monkeys are usually seen as pets providing entertainment to their owners. That they were imported is obvious from numerous scenes of ships with monkeys on the masts and cavorting on deck. Because they can be aggressive, baboons are shown assisting the police. They are also shown robbing figs and other fruits from orchards and markets. They probably were not trained fruit pickers, as some have proposed, but rather robbers and competitors for the sweet produce. Finally, menageries of Pharaoh and other

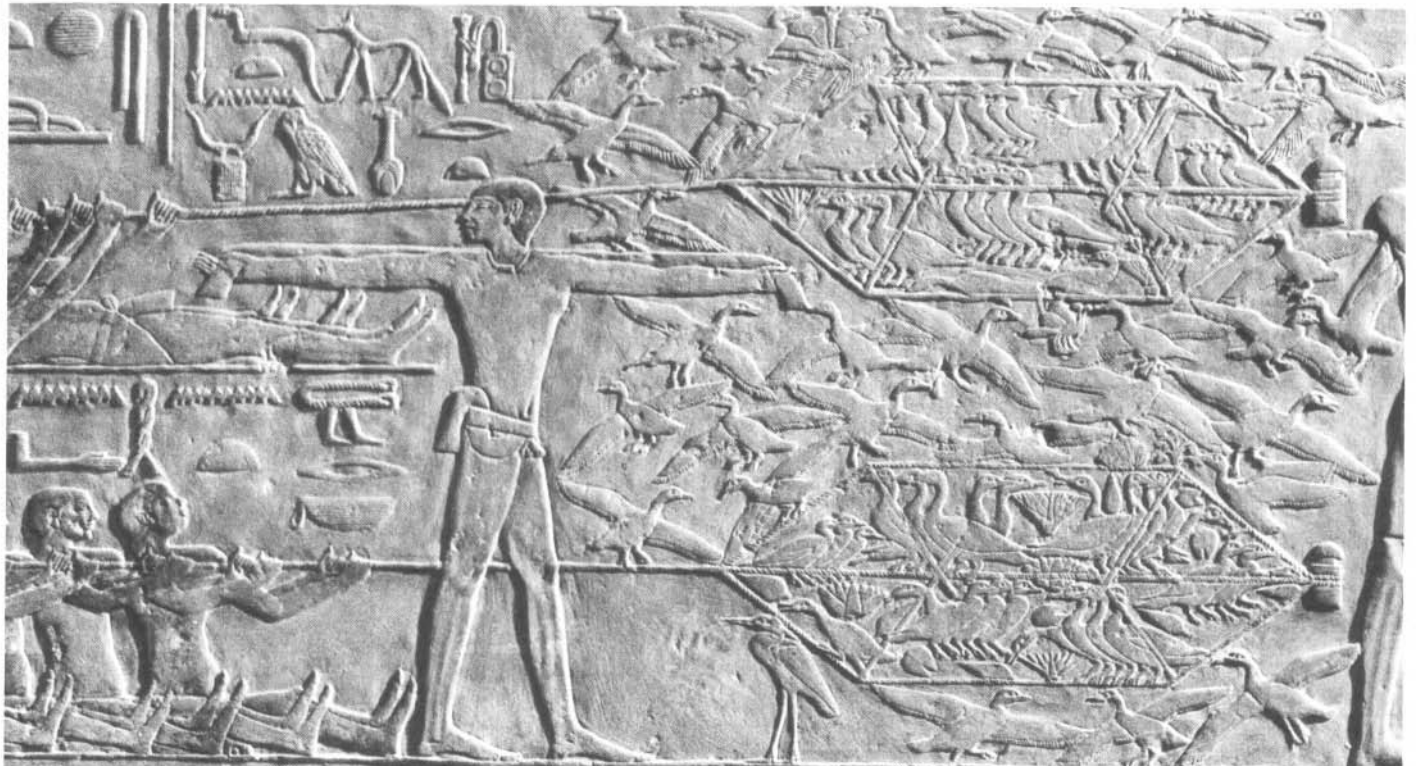

Fig. 16.5 A scene from the mastaba of Ptahhotep II, Saqqara, showing two groups of fowlers trapping waterfowl with clap-nets in the swamplands and using a tame heron as a decoy to attract them. The "lookout" man signals to his companions that the nets are filled and to heave on the draw ropes by standing up and spreading a strip of cloth across the back of his shoulders. 5th dynasty. Photo courtesy Patrick F. Houlihan.

powerful nobles probably held baboons and monkeys on their estates as a personification of Thoth, and many scenes could be reminiscent of this practice (Brewer *et al.* 1994; Houlihan 1997).

SUMMARY

The overall trend from late prehistoric through Dynastic times was one of a greater emphasis on domestic herd animals and decreasing emphasis on wild animals. Fish remained important through Egypt's long historical period and were a mainstay of the diet, particularly those species displaying a seasonal behavior that allowed them to be caught easily and in great abundance. Ironically, the Nile Valley produced few domestic species. The domestic complex was introduced into Egypt from the east sometime prior to the fifth millennium B.C. The introduced herd animals were further adapted to Egypt's environment through the appearance of local breeds; genetically wild animals continued to play a role as a source of food, for religious activities and for sport.

CHAPTER SEVENTEEN

AN ARCHAEOZOOLOGICAL PERSPECTIVE ON THE CULTURAL USE OF MAMMALS IN THE LEVANT

BRIAN HESSE AND PAULA WAPNISH

The possibilities presented by animals to the human imagination and the demands they placed on the societies that chose to utilize them has structured the cultural life of the Levant from its earliest occupation until today. Part of the evidence for the history of the "zoocultural" sphere is recorded in text and art, but a direct approach to the reconstruction of its constituent relationships goes through the primary physical evidence of interaction between people and their livestock and game, the bones preserved in archaeological sites.

Some animal-related finds would seem to be clearly artifactual in the sense that the bones were intentionally and meaningfully deposited by members of ancient societies, as tomb offerings or burials, for instance, and so support investigation of the symbolic associations linked to animals. These exceptional finds stand in contrast to the abundance of disarticulated and fragmented osseous finds that litter Middle Eastern archaeological sites in numbers approaching that of potsherds. It would be a mistake, however, to assume that these less obviously patterned finds are linked to ancient actions in a way that always gives our interpretations direct access to the "etic behavioral modes of production" (Harris 1979: 51)—the systems of physical actions that generated resources for ancient societies and the goal of much modern materialist research—unimpeded by problems interposed by the ancient imposition of meaning on debris. It is a shaky premise to suggest that midden deposits are an "unbiased" source of information about the behavioral "realities" of ancient experience since they seem to contain no overt message. Garbage is as much a culturally constructed category as any other (see Marciniak 1999).

TAKING A CULINARY APPROACH

The perspective that should be adopted in the study of faunal remains from archaeological sites can be termed "culinary." By this label we mean that the cultural incorporation of animals is a process that links the interests of pastoral producers in their fields, butchers and other resource redistributors in their shops and stockyards, cooks in their kitchens, hungry people in their dining rooms, and clean-up crews at their dumps into large reflexive and potentially differentiated systems of motivated actors. The material *deposited* at archaeological sites is the complex residue of this feed-forward, feed-back, system of affect and effect. There is no reason to assign the information contained in a particular collection to just one part of this trajectory, say the goals of pastoral producers, *a priori*. It is a matter of investigation to determine what parts of the overall culinary culture are responsible for any collection at hand.

However, it is also a reality that the culinary approach is only gradually coming to be widely adopted in the Near East. A large part of our theoretical literature emphasizes the significance of the producer, his circumstances, his goals. As an instance, considerable effort has gone into the evaluation of mortality information developed from samples of sheep and goat bones and teeth. This interest developed from a need to establish criteria for distinguishing the debris of hunters from that of herders; to separate wild from domestic stock (Coon 1951, see the discussion in Hesse 1982 on "young kill"). Payne (1973), using ethnozoological data he had gathered in Anatolia, expanded on the hunter/herder dichotomy to develop a series of model mortality curves that described the optimal culling strategies for meat, dairy and fiber producers respectively, a template for analysis that has become deeply embedded in Near Eastern zooarchaeology, at least as done by British and American researchers. In an exceptionally useful and detailed study based on work in Iran, Redding (1981) further developed this approach by specifying the conditions that predict both the ratio of sheep to goats in a pastoralist's flock and the schedule on which animals are slaughtered. He discovered that often the goals treated by Payne took a backseat to the demand for herd security. Finally Cribb (1985; 1987) showed us that the analysis of mortality information had to address yet another fundamental concern of the producers: the desire to increase the size of the herd.

Useful as all this research was and is, to use it one has to make an

important assumption: that all the behavioral components of the model system were actually represented in the archaeological sample to which it was applied, and in the case of Redding's work, that the archaeological context was a subsistence oriented economy. Yet we know that with the advent of complex urban environments in the fourth millennium B.C., relationships based on disparate power began to structure the rural-urban environment. Sometime thereafter, markets and urban-based redistributive centers became fundamental components of the exchange system. The needs and demands of these institutions began to flow back into the decision-making process of the pastoral producers. Zeder (1991) has developed a fully-rationalized model of this system, one based on the expectation that ancient systems would evolve to ever more efficient modes of resource acquisition, predicting how the emergence of indirect chains of supply would have shaped the kind and variety of animals moving into and along the delivery channels. The specific demands of central authorities in the arena of animal resources have also received attention in a study that illustrated the impact of imperial demands on vassal communities (Wapnish 1996). Finally, the impact of specific cuisines on animal exploitation systems has received attention. Grantham (1992) worked with Druze villagers to develop a model of how the need to provide certain meals impacted the way animals were slaughtered and butchered. Klenck (1995) has evaluated the impact of the needs of the Bedouin animal sacrifice system on the culinary system. The key implication of all this research is that growing social complexity implies the segregation of producers and consumers, a condition that forces our interpretive models to become vastly more elaborate and context dependent. These daunting conditions, which demand skills in history as well as zoology, probably have discouraged some zooarchaeologists from tackling large samples from historic period tells in the Near East or reduced reports to simple unremarked appendices.

ISSUES SURROUNDING SAMPLES

On the other hand it has also been shown convincingly (Hesse and Wapnish 1985, Lyman 1994, Reitz and Wing 1999) that complex webs of natural factors as well as cultural ones shape the samples recovered from archaeological sites. Site/sample formation processes such as the activities of carnivores and scavengers, the effects of redeposition produced by the construction of dwellings and other buildings, and losses

due to soil conditions or other erosive factors as well as the uneven application of intensive recovery methods add "noise" to the information "signal" received from the past.

The uncertainties produced by these conditions are slowly responding to the development of newer methods of both excavation and analysis. The routine collection of animal remains from sites of the Bronze Age and later in the Levant is only a recent development. Though reports of fauna from the historic periods go back to at least the work of Bate at Lachish (1953) and Megiddo (1938), a glance at the bibliography (and it is by no means exhaustive) associated with the tables of faunal evidence that form the descriptive core of this study shows that there has been an exponential rise in the number of reports of zooarchaeological evidence. Compared to what was available to Grigson for her important review of the archaeology of the pastoral sector in the Levant just a few years ago (1995), far more information about the proto-historic and historic periods is now published, though that available for the Late Bronze Age and Persian periods remains stubbornly scant.

Much greater attention is now paid to the impact of collection strategy on the quality of archaeozoological collections. However, a significant problem with the temporal assignment of bone remains persists. It is a fact that the osteological attributes of a bone find rarely allow it to be dated or assigned to a well-delimited cultural or temporal category as is common with pottery. Partly because of this, at this stage in the development of Levantine archaeozoology, the ethno-chronological boundaries around our collections are often much coarser than desired for optimal culture-historical reconstructions. An important contributing factor comes from a common excavation methodology. Many archaeological excavation units (e.g., locus, layer, feature, and stratum; the systems are numerous and sometimes idiosyncratic and confusing) are assigned a date based on their stratigraphic position and most recent pottery, an analytic strategy that is appropriate for many questions. However, for bone remains the key association is the relative date of the contents of an excavation unit since it is unlikely that all the bone fragments found in one were first discarded at the time the unit took on its final form as a fill, floor, or pit. Failure to address this problem results in "blurring"—while the onset of an archaeozoological pattern may be clear, its disappearance falsely may seem to be gradual (Hesse and Rosen 1988, see also the new discussion in Lev-Tov 2000). Most of the archaeozoological literature on the Levant, particularly in

the historic periods, does not make clear how dates are assigned to faunas. Thus, the patterns of change in animal use that are apparent may be seem more indistinct than they really are while others may simply be missed. In general, the later the period and the more important mud-brick construction is at a site, the worse the problem of blurring, since the ability of ancient societies to engage in significant earth moving (and artifact mixing) activities has only increased through time.

The range of information that is provided in the archaeozoological literature has broadened. Simple presence/absence reports or species lists have been replaced with attempts to quantify the relative abundance of the various taxa in a sample. Most significant, the archaeozoologist's ability to distinguish the two most common taxa in Levantine animal economies—sheep and goats—has markedly improved (see, recently, Buitenhuis 1995). The size of an animal carcass has been factored in to measure the economic significance (at least as a source of meat) of a species (Grigson 1995).[1] While not yet widespread, reports of bone measurements and the frequency of bone modifications like cutting, burning, and disease are more common. Ever since Coon's (1951) suggestion that the mortality experienced by an animal herd may be a guide to the manner of exploitation, effort has been made to estimate the timing of slaughter, even, in some cases, specifically for each sex (Grigson 1987b). Attention has begun to be paid to the relative abundance of various carcass parts as an index of the spatial organization and centralization of animal processing (e.g., Hellwing and Gophna 1984), a suite of methods that has been elaborated by Grantham (1992, 1996) into a "cuisine model" through the use of ethnographic data (see Sasson 1998). As this larger assortment of archaeozoological variables becomes standard fare in all reports, the ability to trace the history of animal use in the Levant will grow.

HISTORICAL TRAJECTORY

Seen at the grossest scale, the historical trajectory of the economic incorporation of animals—those species both widely recovered and present in at least modest amounts—into cultural systems since the early

[1] The absolute carcass weights in kilograms for sheep/goats, cattle and pigs as provided by Grigson (1995) seem unrealistic for Near Eastern, particularly ancient, stock. Perhaps some editing error has crept into her tables. Nevertheless, the point about the *relative* significance of various species of different size that she makes is valid.

Neolithic in the Levant has aspects of both simplification and elaboration. The range of species routinely utilized has decreased (though there have been significant additions) while the cultural systems devoted to exploiting them have grown more complex. The vast bulk of bone remains found on archaeological sites from the late Pre-pottery Neolithic B through the Medieval period derive from very few species. Gazelle and deer, for example, important resources in Pleistocene and Early Holocene samples (e.g., the early report of Bate 1937; and the recent discussions of Stiner and Tchernov 1998; Tchernov 1996) decline sharply by the early sixth millennium. While these species do provide significant buffer resources in various places and times during the subsequent millennia, never are they the basis of the meat supply for later sites. Similarly, smaller mammalian and avian resources are present at very low frequencies in late Neolithic sites and later, a fact that, as with fish remains, may be an unintended byproduct of the failure to employ fine-mesh sieves or flotation systems. Even when they are recovered, it is frequently not certain that they actually contributed to ancient human diets since alternative explanations for their presence (e.g., the activity of owls or scavengers) in the deposit cannot always be ruled out. For example, nearly complete skeletons of lizards or snakes are recovered occasionally at tell sites. These are much more likely natural deaths than evidence for an occasional reptile stew. The significance of rare species is often complicated by stratigraphic uncertainty. A scattering of chicken (*Gallus domesticus*) bones have been recovered in pre-Hellenistic collections. The dating of these associations in our view, however, is dubious, since, in many cases, contamination from later deposits cannot be ruled out. Further, when chicken arrives in a Levantine animal economy, it tends to be a rather dramatic event, one recorded by dozens or even hundreds of bone finds (Thesing 1977). The key species that come to dominate the animal bone record in late Neolithic times are the basic barnyard domesticates: sheep (*Ovis aries*), goat (*Capra hircus*), cattle (*Bos taurus*) and pig (*Sus scrofa*). To these, during the subsequent millennia, the donkey (*Equus asinus*), the horse (*Equus caballus*), the camel (*Camelus dromedarius*) and eventually the rabbit (*Oryctolagus cuniculus*)[2] are added.

Paralleling these simplifications and additions to the makeup of

[2] We are unaware of any zoological reports of this species that would allow the dating of its introduction. Zeuner (1963) suggests that the Romans were responsible for moving the species out of its Iberian homeland, so perhaps the date may be as early as that.

Levantine animal resources, the cultural management systems devoted to their care and exploitation underwent substantial elaboration. Fundamental, of course, was the transformation of the relationships between people and their animals reflected in the *social* process of domestication initiated during the Neolithic. In concert with this attitudinal change, one that converted game into pastoral capital, were a series of changes in the cultural processing of animals, innovations that had temporal, spatial and social dimensions. Along the temporal axis, an animal is raised, slaughtered, butchered, distributed, stored, cooked, and eaten. For each type of animal, the length of this process is a function of the reproductive and growth rates of the individual species, the potential uses to which a particular type of animal may be put, the storage technology available, and the cooking technique employed. The divisions in the temporal axis provide the potential for social differentiation. Each step can become the province of a specialist, eventually reaching the degree of rationalization seen in the modern combination of agribusiness and supermarket culture. Specialization may be combined with growth in the size of the system devoted to the extraction of resources from animals as domestic/household modes of production come to be supplemented or replaced by tributary or market-based systems regulated by hierarchically arranged decision makers. Finally, along the spatial dimension, each of the animal related activities can be conducted in separate areas. This multi-dimensional differentiation of animal exploitation potentially can be linked to expectations for the archaeological record both within single sites and in the contrasts and similarities found between sites. It is still, unfortunately, early in the development and application of such methodologies to the archaeozoology of the Levant.

THE ANIMAL BONE EVIDENCE

In a series of tables accompanying this report, a fairly broad, though certainly not exhaustive, compilation of information culled from the widely scattered zooarchaeological literature of the Levant is presented. The intent is to provide an overview, at the largest scale, of the significance of different species in the ancient economies. The information is presented in coarse geo-chronological blocks following the temporal assignments given the material by those that reported on them. In many cases little contextual information about the spatial distribution of the

remains is provided in the reports, a failing rapidly being remedied by the standard set by recently completed theses (e.g., Grantham 1992) and dissertations (e.g., Toplyn 1994; Lipovitz 1999; Lev-Tov 2000) as well as other new publications. No attempt has been made to "correct" the chronological or cultural assessments given these collections in the light of recent or ongoing debate over controversial stratigraphic situations. Given the difficulties mentioned above in assigning bones chronological tags, the rough temporal blocks are justified. Further, no attempt has been made to "massage" the data by considering the variable excavation modalities that were employed. In most cases, the crucial facts to make such judgements are simply unknown. Only recently have excavators routinely reported on their use of screens and sieves and often those omit to note the coarseness of the mesh or whether the procedure was used on all contexts, or only ones deemed particularly significant. One may expect that the more recent the excavation and the older the period investigated, the better the quality of collection. It is probably reasonable to have greater confidence in the frequency relationships (here presented as the raw counts of bone fragments assigned to a taxon and as percentages of the total number of identified fragments) of animals of similar size. Thus the ratio of sheep to goats is probably accurate as is the ratio of sheep-goats to pigs and gazelles. The relationship of these to the larger stock, equids (donkeys, horses and mules?), deer (both red and fallow), hartebeest (*Alcelaphus busephalus*), cattle or camels is less certain. An indirect approach to considering the problem would be to determine the scope and duration of each excavation and compare that to the raw number of specimens reported. From that type of datum such anomalies as the unusually high ratio of cattle to sheep goats at Early Iron Age Masos can be understood as the possible result of less than intense trench collection and sieving.

Compared to other parts of the Near East where the available research on zoological finds seems to be concentrated in pockets, the spatial distribution of Levantine samples in most periods is quite broad. Thus we have tried to express some of the environmental range of the reported samples by clustering them in locational groupings.

DOMESTICATION AND HUSBANDRY: PROCESS AND PATTERN

Definitions

The Levant was an early beneficiary of the Neolithic technology of animal domestication (see Tables 18.1 and 18.2). By the sixth millennium, domestic populations of the core barnyard stock (sheep, goats, cattle and pigs) were incorporated into human society, having replaced an earlier dependence on various gazelles and cervids (Uerpmann 1987). Beyond this simple summary little else is settled. One debate circulates around the definition of what is being discussed. Two schools have arisen, one that views domestication as a biological event, a transformation of the behavior and morphology of wild stock that may have been the inadvertent outcome of interaction with human groups (see, e.g., Ducos and Horwitz 1998; Horwitz 1996e; Tchernov and Horwitz 1991; Zohary; Tchernov and Horwitz 1998). The other, not necessarily at odds with the first though it often seem so, sees domestication as a social event, one marked by the transformation of human attitudes towards the animals in their environment (e.g., Ducos 1989).

The two analytical strategies target different kinds of evidence, usually morphological in the first case and based on mortality information and archaeological context in the second. A particular difficulty arises when interest turns to a species that is not now domestic. For instance, there have been occasional arguments presented for the management of gazelles during the early Holocene, particularly the Natufian (Legge 1972; Simmons and Ilany 1975–77). Criticism of this proposal has, however, focused on aspects of the morphological evidence (questioning the evidence for size reduction or change in morphometric variation, Dayan and Simberloff [1995]) or the nature of the gazelle itself (the territorial behavior of rutting males as an impediment to modern management, Uerpmann [1996]) rather on the evidence for an altered animal–human relationship. In our view this tends to cut off investigation of potential "extinct cultural patterns"—socio-technical experiments that did result from profoundly new human attitudes, ones important for us to recognize given their historical significance to social and political process, but which did not survive to produce modern replicas. We need to know about the domestication failures (Stevenson 1990) as well as the successes. Perhaps the recommendation of Hecker (1982) to use the term "cultural control" to label the relationship should be re-examined.

A second debate engages the order of domestication, the sequence

in which the various species came under human control. Garrard, Colledge, and Martin (1996) present the conventional story for the caprines: first goats, rather than ibexes, though both were indigenous species in the Pleistocene Levant, appear as domesticates in the PPNB. Sometime later in the same period, sheep, which may or may not have been indigenous (S. Davis *et al.* 1982),[3] joined the flock. Next came pigs and cattle (Grigson 1989) by the sixth millennium B.C. Late in the fourth millennium B.C., donkeys (and perhaps horses [Grigson 1993]) were incorporated. Last to join the list was the camel, perhaps as early as the second millennium B.C. While this model accurately reflects the accumulated body of faunal evidence, it has been challenged by K.W. Russell (1988). He applied a combination of optimal foraging theory and a body of data about the productivity of various species under management to generate an hypothesis that the expected sequence of adoption should be almost the exact reverse of the standard model. He went to some lengths to try to accommodate the evidence to his approach though the result was not very convincing.

However, his approach did illuminate a key issue under the topic of the motivation for animal domestication in the Levant. It is often treated as unproblematic for bands of mobile hunters to adopt the values of pastoralism. The benefits seem so obvious—the animals you used to have to chase when you were hungry, you now can just cull. However, core values of sharing among many forager-hunters conflict with the strong property values of pastoralists whose herds often seem to best be understood as "capital." It is therefore difficult to see how a successful Early Holocene hunter, whose status is likely to have rested on his ability to redistribute meat, could easily take up "husbanding" that same resource on the hoof, crucial if herding success is to be had. Russell suggested that the way out of the dilemma was to consider the possibility that the first steps to caprine domestication were kind of oblique. Animal husbandry did not have to directly challenge the values of hunting if it emphasized the production of milk, and three of the first four domesticates were potential dairy specialists, something the gazelles and deer could not become. Further, this technology, one perhaps out of the hands of the hunters, would, as it gradually succeeded and encouraged emulation, account for the gradual supplanting of gazelle and

[3] See the recent review of the problem by Horwitz and Ducos (1998). They conclude that wild sheep may have made an unsuccessful migration into the Levant in the Late Natufian, but subsequently were (re-)introduced to the region as domesticates in the late PPNB.

deer by domestic stock in the Pre-Pottery Neolithic and Pottery Neolithic that we see. Following this line of argument, specialized meat production on the part of herders ("carnivorous pastoralism") is a later innovation. We unfortunately do not have sufficient evidence of sex-specific culling strategies yet to evaluate this proposal, yet it addresses questions of importance in finally developing an historical model of the process.

History of Husbandry

Already by the end of the Pre-Pottery Neolithic and the beginning of the Pottery Neolithic there is evidence for the differentiation of the animal economy. Most striking is the wide variation in the abundance of cattle in the sites (Tables 18.1 and 18.2). The coastal sites of Atlit Yam and Ashkelon both show much higher frequencies of this animal. Pigs also are found in widely different amounts, ranging up to a high of 48% in Lebanon at Sukas, as are gazelles, which constitute the bulk of the remains at Kfar Haharesh. Part of the underlying structure for this variation is environmental, another is the fact that the domestic or wild status of these animals is not completely established at all these sites.

The Chalcolithic (Table 17.3) has been identified by Levy (1992) as the point at which animal production shifted from "limited village pastoralism" (Levy 1992: 76) into a differentiated form. The new pastoral economy was a paired structure—the familiar sedentary village-based system, where pigs and cattle continue to be significant, and the nomadic or transhumant sector—an achievement driven by population growth and the need for enhanced productive potential. The stubborn difficulties archaeologists have in locating transhumant sites and recovering animal remains when they do prevent the effective evaluation of this idea. Certainly it was the time that donkeys, and perhaps horses, begin to appear in the record.

By the Early Bronze Age (Table 17.4) a rural and urban sector had emerged, though, since each site sample tends to be done in isolation, we do not yet have direct evidence of the economic links between the two in a regional setting. However, in the case of Megiddo (Wapnish and Hesse 2000), there is evidence for a large scale "sacrificial system."[4]

[4] The similarity between the Megiddo "sacrificial system" and that reported based on the remains found in the High Place at Tel Dan (Wapnish and Hesse 1991) is striking. It suggests that the choice of young sheep and goats for slaughter and the segregation of the carcass into two sections—the skin with the feet and the meaty portions of the carcass—crosscut the various religious traditions of the Bronze and Iron Ages.

Thousands of bone fragments, most of them from sheep and goats, were deposited in wide channels between the monumental walls of an enormous structure. Perhaps most interesting, the remains found in different channels were themselves distinct, seeming to be the byproducts of different parts of the sacrificial process. In one channel numerous articulations, mostly of sheep and goat feet, were found, apparently the byproduct of preparing animals for sacrifice, where in another, much of the remains were small and often burned, apparently the residue of the sacrifice itself. Unfortunately we do not have direct evidence from the specific sites in the rural sector that produced the animals that were brought to the city. Nevertheless a comparison with En Shadud, Kinrot, and Yaqush provides a sense of the variability in the production in smaller communities.

In later periods there is evidence for the movement of animals between rural producers and urban centers during the Iron Age (Table 17.7). In particular, the particular pairing of sheep to goat ratio and the age curve for the sheep/goat flock at Ai/Raddana makes sense if one assumes that animals are being exported out of those rural communities (Hesse 1991). At the receiving end (though not from Ai/Raddana probably), the abundance of "market age" animals in the contemporary sample from Miqne-Ekron suggests the import of stock into that market.

There is also evidence of export from urban centers. Wapnish (1993; 1996) showed that a strong distortion in the sheep/goat mortality patterns at Tell Jemmeh and Miqne-Ekron during the Assyrian period could be explained by the export of animals to distant markets in the imperial system or to feed resident troops.

The Special Case of the Pig

Differentiation in the economy is present in the Middle Bronze Age as well. The exploitation of the pig is a case in point. Before discussing the particular evidence, some background on this species is necessary. The remains of pigs (*Sus scrofa*) receive more attention in the literature than other taxa given their familiar position at the head of the list of prohibited species (see Hesse 1990, 1995; Hesse and Wapnish 1997, 1998, and the literature cited therein for a sampling of the discussion). It is thus perhaps surprising to discover that a basic zooarchaeological parameter about the animal is so sketchily understood. The wild or domestic status of archaeologically recovered pigs typically is determined

by two criteria; size (domestic stock being smaller than their wild cousins) and mortality (most domestic pigs are slaughtered while they are young). However, the osteometric criteria (see Flannery 1982; Mayer *et al.* 1998) were constructed using reference populations of wild pigs from the northern reaches of the Near East and Europe. The applicability of these standards to the Levant, and particularly the southern Levant, where smaller forms of many species are indigenous is uncertain. The risk is that domestic status will be assigned to morphologically wild species.

The relative abundance of pigs in the southern Levant has a distinct historical pattern. Relatively widespread and abundant through the Chalcolithic, the number of bones found in sites declines from the Early Bronze Age to a low in the Late Bronze Age. A small and short-lived rebound marks the first phases of the Early Iron Age in a few sites. Then it is not until the Hellenistic period that the pig regains its former popularity, a state that lasts, at least in some settlements, until the Islamic era.

Within this broad outline a number of principles can be marshaled to explain important internal variations. The most familiar, well-known through the discussions of Marvin Harris (1985), relates the animal's distribution to the availability of water, a rule developed by Grigson (1987a) into the specific prediction that pig husbandry is limited by the present 250 mm isohyet. Certainly there is a rough correlation between the wetness of the environment and the frequency of pig bone finds.

To return to the question that initiated this discussion: what about the use of pigs in the Middle Bronze Age (Table 17.5)? This would seem to reflect another principle affecting the presence of swine in ancient economies, the use of the animal as a rural subsistence strategy in the face of growing urban power (Hesse 1990; Hesse and Wapnish 1997). There was internal differentiation in the use of pig. At Tell el-Hayyat the MB temple contexts were relatively "pig free" compared to what was found in the surrounding residential architecture (Falconer 1994).

The pig is the subject of most discussion in the context of the Early Iron Age. Ever since we published the tentative correlation between pig remains and Philistine occupations (Hesse [1986], now strongly confirmed at Miqne-Ekron by Lev-Tov [2000]), the use, or in this case, non-use of the animal as an ethnic marker has been endorsed (see the citations in Hesse and Wapnish 1998). We continue to resist this approach given the wide range of forces acting on pig abundances. It is

also true (see Table 17.7) that pig remains are so rare in the period that their non-occurrence crosses all sorts of major ethno-political borders, so many that it is hard to see how the avoidance of the animal could have had much salience. It is only during the Hellenistic and later periods that substantial pig use returns (Tables 17.10, 11). Its occurrence in urban settings suggests that the avoidance of pig use may have been one way that rural communities could have resisted the impact of Hellenistic culture.

The Transport Sector

Equids. Donkeys, horses, onagers and their respective crosses, members of the family Equidae, are all known from the ancient Near East. Donkeys, by far the most common equid in archaeological deposits, is known in its wild form, *Equus africanus*, from material remains in the eastern desert of Egypt, Nubia and parts of southwest Asia. The earliest evidence for the domestic form, *Equus asinus*, comes from fourth-millennium deposits in Egypt and the Syro-Arabian region (Meadow and Uerpmann 1986–91). On the basis of bone size, domestic donkeys were probably present in the Levant during the Chalcolithic period (Grigson 1993). They are certainly present at Arad in Early Bronze I–II levels (Lernau 1978; Grigson 1993). Also, Chalcolithic and Bronze age figurines from Levantine sites model load-bearing animals that certainly appear to be donkeys (Epstein 1985).

The tarpan, *E. ferus*, is documented from Pleistocene sites in the Levant (Meadow and Uerpmann 1986–1991) and may have persisted there as late as the Chalcolithic, on the basis of recent remains from the northern Negev (Grigson 1993). Wild horses were probably domesticated first on the Eurasian steppe during the late Neolithic. Evidence for the introduction of domestic horse (*E. caballus*) into the ancient Near East does not occur much before the fourth millennium and the documentation is sparse (Uerpmann 1987). One of the earliest attestations of domestic horse is a clay figurine dated to about 2300 B.C. from Tell es-Sweyhat, two hundred miles northeast of Damascus, which clearly depicts an equid with its mane flattened against the neck, a morphological feature associated with the domestic form. In the Levant, Grigson (1993) again used size to determine that a small domestic form of horse was present in the Negev during the fourth millennium. Prior to her report, the earliest domestic horse in the Levant was reported by S. Davis (1976) for the Arad Early Bronze I–II material; con-

trast Lernau (1978) who identified all the equids at Arad as domestic donkey.

The onager, *E. hemionus*, inhabited a region from the Caspian to the Mediterranean Seas in antiquity. For a long time, many scholars believed that the onager had been domesticated in Mesopotamia. This was based largely on the identification of equid-like animals depicted on the Royal Standard of Ur as onagers. More recent consideration of linguistic (Postgate 1986) and morphological evidence make this unlikely. In particular, had onagers been domesticated in Early Dynastic Mesopotamia, they would have the status of being the only animal once domesticated in antiquity which is not and cannot be domesticated today (Clutton-Brock 1987). However, onagers were captured and used for stud crosses with donkeys in Mesopotamia between ca. 2600–2000 B.C. (Postgate 1986), presumably to introduce hybrid vigor. The offspring could be trained and was stronger than the donkey. Onager-donkey crosses disappear from Old Babylonian accounts once the horse became more widespread.

Throughout the ancient world, horses were associated with the elite, usually military, privileged classes. Their first use appears to have been as the motive power for light chariots; later, with the development of mounted cavalry. Outside of these circles, horses were very rare. Only occasional horse bones are noted in faunal reports before the later historic periods (not much before the Persian period), and are almost always greatly outnumbered by domestic donkeys. Onagers generally disappear from the faunal record by historic times, and several Bronze Age remains in Jordan are among the latest known. It was long thought that the domestic horse, along with light chariots, were introduced into Egypt by the Hyksos, western Asiatics from southern Palestine who settled primarily in the Delta region during the Second Intermediate period (ca. 1800–1570 B.C.). However, the almost complete skeleton of a horse (Clutton-Brock 1974) was found buried at the remote Middle Kingdom site of Buhen in Nubia dating to ca. 1675 B.C. (Burleigh 1986). In addition, several horse remains from Tell el-Daba and Tell el-Maskhuta, dating to ca. 1650 B.C., were identified by Boessneck (1976). Whether or not Asiatic peoples were responsible for introducing the horse into Egypt cannot be answered with such few remains, but the presence of a horse so far south of the Delta calls into question the traditional role assumed for the Hyksos.

Camels. The bones of camels are very infrequent on sites in the Levant. Only a scattering of reliable find spots document the presence of

the animal in the region prior to the Iron Age and all seem to have been dromedaries (Wapnish 1981; 1984). As an important component of the economy, at least as seen from the urban and village sites that have been excavated, the dromedary first appears during Iron Age II, first at Tell Jemmeh (Table 17.8), and then up the coast at Ashkelon where a nearly complete skeleton was found in a deep seventh century fill at the western margin of the site. Other camel skeletons have been found further up the coast at Mikhmoret in a Persian/Hellenistic tomb context, though it was not clear whether the camels were being buried or were part of the fill that accumulated atop a shaft tomb. They are also known from Pella in the Jordan Valley. Curiously, camel remains do not penetrate even the fringes of the hill country until much later. The vast samples from Miqne-Ekron in the Shephelah and Tel Dan in the Galilee have produced only a very few bone fragments despite the fact that these sites sat on important nodes in the political and economic network. An important use of camel remains was in the production of bone tools. The bones of this animal are particularly thick and present large flat surfaces to a carver. As a result they were the preferred raw material in the bone industry that developed in the region (Wapnish 1997b).

ANIMALS IN RITUAL CONTEXTS

It was remarked above that sacrificial systems processed sheep and goats at both Megiddo and Tel Dan. Additional evidence of that activity was reported by Sade (1988) based on the Iron Age evidence collected at Arad. These system also included significant numbers of cattle in their operations. Pigs have been reported as receiving "ritual" treatment. Horwitz (1987a), for instance, has reported some tomb associations that contain significant numbers of pigs. Some of these assertions are either wrong or questionable. Wrong are the repeated reports that the caches of astraguli at Megiddo and Ta'anach included pig remains. Professional examination of the collections has revealed that they contained only sheep, goats, gazelles and deer. Such finds as the partial skeleton found at Hazor (Angress 1956) or the unpublished Late Bronze Age find at Beth Shean need further documentation to demonstrate that they were the result of ritual interments or meals. Mere proximity to a temple is not enough. Sacrificial systems typically reduce their victims

to small bits rather than preserve their victims as whole or partial carcasses.

Equids were also used for ritual activities throughout greater Mesopotamia and the eastern Mediterranean (see the survey by Wapnish 1997a). From the late fourth millennium until the first part of the second, donkeys were included in elaborate human burials that even included wheeled vehicles. Equid burials were especially prevalent during the Middle Bronze Age in southern Canaan and the Delta. (The most recent MB equid burial was of a donkey in the Sinai [Louis Chaix, personal communication]). Calling the long and widespread interment of equids "warrior buials" (Philips 1995) from the other grave goods associated with the human dead, however, is an overstatement, because not all instances involve military-like furnishings. In the Levant especially, the burials take varied forms. Many of the burials, such as those at Tell el-Ajjul, Jericho and Tell el-Daba, were associated with human tombs. Some were foundation deposits, such as the baby equid at Tell Jemmeh (Wapnish 1997a), one at Ajjul, and what was probably a Middle Bronze foundation offering at Tel Miqne-Ekron redeposited in an Iron I context (Lev Tov 2000). At Tel Haror, in the courtyard of a Middle Bronze temple complex, Oren (1997) discovered a complete donkey skeleton with a bronze bridle in its mouth; the remains of a second skeleton are nearby. While most of the burials in the Levant were of donkeys, at least one was of a horse (at Tell el-Ajjul). There were also significant differences between equid burials in grave offerings, human associations, age of animals, date, and the parts of the animal skeleton interred. The one common denominator is the equid, which figured prominently in the ritual activities of the northwestern Semites.

It has long been known from textual evidence that the Amorites of Mari sacrificed a donkey foal to conclude a covenant. Thus, equid burials in the southern Levant are part of a long tradition going back to Early Dynastic Mesopotamia, and to ritual uses of equids that took varied forms among the western Semites.

CONCLUSION

Several decades of growing interest in zooarchaeological finds on Levantine sites has begun to produce a body of evidence that can be used comparatively to generate an historical account of the evolution of animal exploitation. Numerous methodological uncertainties still

prevent fullest use of the growing data set. The situation is more or less parallel to that in which ceramic archaeologists found themselves before a degree of standardization in reporting and description set in. More serious is the fact that, while animal production is an extensive venture, one that interlocked an array of rural and urban communities, we have not collected evidence in an organized way so that most of a particular system example could be evaluated. At the opposite end of the scale, too little attention has been paid to the within-site level of variation, exploring the access to animal resources enjoyed by the various sectors of the ancient societies. One might say that we are, from both perspectives, too heavily engaged at the analytic level of the site. Nevertheless, an outline of the changes in animal production from the Neolithic onward has emerged.

Table 17.1. The Distribution of Economically Significant Mammalian Species in PPNB Sites.

Site	Region	Time	Ref.	No.	Sh/Go	Sheep	Goat	Cattle	Pig	Equid	Camel	Gazelle	Deer
Basta	Jordan	PPNB	Becker 1991	36489			29815 **82%**	1417 **4%**	112 **<1%**	1305 **4%**		3803 **10%**	
'Ain Ghazal	Jordan	PPNB	Köhler-Rollefson 1989a	2561 (ID)	1591 **62%**			364 **14%**	205 **8%**			401 **16%**	
Beidha	Jordan	PPNB	Tchernov 1993a	7223 (ID)			145 72%	226 3.1%	30 <1%	55 1%		485 7%	
Jericho	Jordan Valley	PPNB	Tchernov 1993a	620 (ID)			272 43%	76 12%	100 16%	1 2%		95 15%	76 12%
Beisamoun	Galilee	PPNB	Ducos 1968b	76	41 54%			1 2%	21 27%	2 3%		11 14%	
Kfar Hahoresh	Galilee	PPNB	Goring-Morris *et al.* 1994-5, 1995	602			96 (W) 24%	34 (W) 9%	18(W) 5%			241 61%	5 1%
Atlit Yam	Coast	PPNB	Tchernov 1993a Horwitz & Tchernov 1987	322 (ID)			145 45%	138 43%	29 9%			9 3%	1 <1%
Abu Ghosh	Hill Country	PPNB	Tchernov 1993a	3612 (ID)			2434 67%	633 17%	468 13%			76 2%	1 <1%
Ujrat el-Mehed	Sinai	PPNB	Dayan *et al.* 1986	2309 (ID)			2271 98%			1 <1%		37 2%	

Table 17.2. The Distribution of Economically Significant Species in PPNC and PN sites.

Site	Region	Time	Ref.	No.	Sh/Go	Sheep	Goat	Cattle	Pig	Equid	Camel	Gazelle	Deer
Ashkelon	Coast	PPNC	Hesse data	5545	2343 42%	110 82%	24 18%	2704 49%	372 7%			126 2%	
'Ain Ghazal	Jordan	PPNC	Köhler-Rollefson 1989a	789 (ID)	549 70%			47 6%	105 13%			79 10%	
'Ain Ghazal	Jordan	Yarmoukian	Köhler-Rollefson 1989a	291	209 72%			27 13%	32 15%	4 2%		19 9%	
Sha'ar Hagolan	Jordan Valley	Yarmoukian	Hesse data	660	427 65%	41 65%	22 35%	81 12%	125 19%			27 4%	
Neve Yam	Coast	PNA	Horwitz 1988	88	28 32%			26 29%	20 23%			14 16%	
Sukas	North Coast Lebanon	PN	Riis & Thrane 1974	390	130 33%	123 95%	7 5%	62 16%	187 48%	1 <1%			10 (game) 3%
'Ain Ghazal	Jordan	PN	Tchernov 1993a	291 (ID)	209 72%			27 9%	32 11%	4 2%		19 7%	
Jericho	Jordan Valley	PN	Tchernov 1993a	60 (ID)	51 85%			4 7%	1 2%			3 5%	
Dan	Galilee	PN	Horwitz 1987b	43	10 23%	2 40%	3 60%	20 47%	12 28%	1 2%			

Table 17.3. The Distribution of Economically Significant Mammalian Species in Chalcolithic Samples.

Site	Region	Time	Ref.	No.	Sh/Go	Sheep	Goat	Cattle	Pig	Equid	Camel	Gazelle	Deer
Nahal Qanah	Samaria	Chalco? Hyaena Den	Horwitz 1996a	187	127 68%			21 11%	23 12%	(3)		12 6%	4 2%
esh-Shuna	Jordan Valley	Chalco	Croft 1994	313	121 39%			47 15%	145 46%			P	P
Munhatta	Jordan Valley	Chalco	Ducos 1968a	356	128* 36%	12 41%	17 59%	114 32%	90 25%	1 <1%		23 6%	
Tsaf	Jordan Valley	Chalco	Hellwing 1988/89a	118	53 45%			40 34%	20 17%	1 1%		4 3%	
Meser	Carmel	Chalco	Ducos 1968a	387	124* 32%	13 81%	3 19%	81 21%	174 45%	2 <1%		6 2%	
Sha'ar Ephraim	Coast	Chalco? Cultural?	Smith & Horwitz 1998	16	10 63%			5 31%	1 6%				
Gat-Govrin	Hill Coiuntry	Chalco	Ducos 1968a	210	77* 37%	4 10%	37 90%	76 36%	38 18%	8 4%		11 5%	
Tel Aviv	Coast	Chalco	Ducos 1968a	523	80 15%	17 51%	16 49%	368 70%	64 12%			11 2%	

(* may include some gazelles) P - present

Table 17.3. Cont.

Site	Region	Time	Ref.	No.	Sh/Go	Sheep	Goat	Cattle	Pig	Equid	Camel	Gazelle	Deer
Gerar B	Negev	Chalco	Hellwing 1988/89b	NR	51%			24%	21%	1%		2%	
Gerar C	Negev	Chalco	Hellwing 1988/89b	NR	67%			22%	6%	2%		1%	
Qatif	Negev	Chalco	Hellwing 1988/89b	NR	64%			33%	1%	<1%		<1%	
Shiqmim	Negev	Chalco	Grigson 1987a	520	458 88%			57 11%				5 1%	
Bir es-Safadi	Negev	Chalco	Ducos 1968a	513	490* 96%	36 60%	24 40%	19 4%				4 1%	

(* may include some gazelles) P - present

Table 17.4. The Distribution of Economically Significant Mammalian Species in Early Bronze Age Samples.

Site	Region	Time	Ref.	No.	Sh/Go	Sheep	Goat	Cattle	Pig	Equid	Camel	Gazelle	Deer
ez-Zeraqon	Jordan Highlands	EB	Dechert 1995	9053	7069 78%	347	287	1754 19%	60 <1%	143 2%		20 <1%	7 <1%
Madaba	Jordan Highlands	EB I/II	Harrison *et al.* n.d.	434	415 96%	30 75%	10 25%	15 3%		3 <1%		1 <1%	
esh-Shuna	Jordan Valley	EB I early	Croft 1994	223	111 50%			29 13%	83 37%				
esh-Shuna	Jordan Valley	EB I early	Croft 1994	335	177 53%			94 28%	64 19%				
Yaqush	Jordan Valley	EB I	Hesse & Wapnish 2000	501	343 66%	17 71%	7 29%	100 19%	22 4%	1 <1%		18 3%	17 3%
Yaqush	Jordan Valley	EB II	Hesse & Wapnish 2000	391	292 73%	18 72%	7 28%	91 23%	4 1%			2 1%	2 1%
Yaqush	Jordan Valley	EB III	Hesse & Wapnish 2000	340	215 62%	14 74%	5 26%	113 32%	4 1%	1 <1%		2 <1%	5 1%
Me'ona	Galilee	EB I/II	Horwitz 1996g	110	72 64%			30 28%	3 3%			5 5%	
Dan	Galilee	EB II/III	Wapnish & Hesse 1991	184	89 48%	8 57%	6 43%	64 35%	9 5%				22 12%
Kinrot	Galilee	EB	Hellwing 1988/89b	307	188 61%			89 29%	26 8%	3 1%			1 <1%
En Shadud	Jezreel	EB I	Horwitz 1985	150	28 28%		1 100%	21 22%	23 24%	24 25%			

Table 17.4. Cont.

Site	Region	Time	Ref.	No.	Sh/Go	Sheep	Goat	Cattle	Pig	Equid	Camel	Gazelle	Deer
Megiddo	Jezreel	EB I	Wapnish & Hesse 2000	16579	2148 78%	125 73%	47 27%	539 20%	39 1%	4 <1%		27 1%	17 <1%
Megiddo	Jezreel	EB III	Wapnish & Hesse 2000	3019	424 69%	33 67%	16 33%	159 26%	25 4%	3 <1%		3 <1%	7 1%
Dalit	Samaria	EBIb–III	Horwitz, Hellwing, Tchernov 1996	1051	820 78%	more	less	178 17%	4 <1%	9 <1%		28 3%	12 1%
Yarmouth	Hill Country	EB II	Davis 1988	216	175 81%			41 19%					
Yarmouth	Hill Country	EB III	Davis 1988	959	868 91%			91 9%					
Ai	Hill Country	EB I	Hesse & Wapnish 2000	244	187 75%	32 74%	11 26%	53 21%	1 <1%	2 <1%		1 <1%	
Ai	Hill Country	EB II	Hesse & Wapnish 2000	457	397 86%	44 58%	332 42%	54 12%	1 <1%	1 <1%		4 1%	
Ai	Hill Country	EB III	Hesse & Wapnish 2000	117	100 84%	9 60%	6 40%	14 12%		1 1%		2 2%	
Gat	Hill Country	EB II	Ducos 1968a	783	421* 54%	142 74%	52 26%	158 20%	71 9%	58 7%		38 5%	37** 5%
Halif	Northern Negev	EB III	Zeder 1990	1905	NR 93%	NR 63%	NR 37%	NR 6%	NR P	NR P		NR 1%	
Arad	Negev	EB II	Davis 1976	185 (M3)	180 97%	50%	50%	3 2%		P (Horse?)		2 1%	

(** includes 35 *Alcelaphus buselaphus*)

Table 17.5. The Distribution of Economically Significant Mammalian Species in Middle Bronze Age Samples.

Site	Region	Time	Ref.	No.	Sh/Go	Sheep	Goat	Cattle	Pig	Equid	Camel	Gazelle	Deer
Kamid el-Loz	Lebanon Mountains	MB IIb	Bökönyi 1990	454 El-phant	336 74%	146 91%	15 9%	87 19%	7 1%	9 2%		1 <1%	14 3%
Abu en-Ni'aj	Jordan valley	EB IV MB I	Falconer 1994	1000	600 60%			110 11%	280 28%				
Gesher	Jordan Valley	MB IIa Tomb	Horwitz & Garafinkel 1991			Young sheep							
Abu en-Ni'aj	Jordan Valley	MB II Temple	Falconer 1994	4662	3953 85%			503 11%	206 4%	NR	NR	NR	NR
Tell el-Hayyat	Jordan Valley	MB II Domestic	Falconer 1994	1948	731 38%			343 18%	874 44%	NR	NR	NR	NR
Sasa	Galilee	MB II Tomb	Horwitz 1987a	62	80%	3 60%	2 40%	8%	12%				
Hazor	Galilee	MB II Tomb	Horwitz 1997	?	100%	more	less						
Sasa	Galilee	MB II (tell)	Horwitz 1996d	102 (all)	29 46%			9 14%	16 25%			9 14%	
Dan	Galilee	MB I-III Tombs	Horwitz 1996b	292	~60%			~26%	~7%				~7%
Ein Hagit	Carmel	MB IIB/C	Hesse 1996	262	143 55%	16 66%	8 34%	60 23%	53 20%	1 <1%		1 <1%	4 1%
Ifshar	Coastal Plain	MB II	Hesse 1990	1491	403 27%			746 50%	342 23%	NR		NR	present
Te'enim	Coastal Plain	MB IIb	Horwitz 1998a	93	43 46%	2 67%	1 33%	22 24%	21 23%	1 1%		3 3%	3 3%

Table 17.5. Cont.

Site	Region	Time	Ref.	No.	Sh/Go	Sheep	Goat	Cattle	Pig	Equid	Camel	Gazelle	Deer
Aphek	Coastal Plain	MB II	Hellwing & Gophna 1984	1129 (ID)	49%			33%	8%	3%		6%	2%
Michal	Coast	MB IIb	Hellwing & Feig 1989	103	49 48%	more	less	45 44%	7 7%				2 2%
Ashkelon	Coast	MB IIa	Hesse data	3701	2850 77%	238 71%	97 29%	532 14%	227 6%	36 1%		55 2%	1 <1%
Jemmeh	Coast	MB II	Wapnish & Hesse 1988	~2500	77%	80%	20%	10%	12%	P		P	
Refaim Valley	Hill Country	MB I House	Horwitz 1989a	283	228 81%			9 3%	43 15%	2 1%			
Refaim Valley	Hill Country	MB I Tomb	Horwitz 1989a	29	84%					16%			
Jebel Qaʿaqir	Hill Country	MB I Tomb	Horwitz 1987a	156	154 99%	7 58%	5 42%	1 <1%					1 <1%
Shiloh	Hill Country	MB II	Hellwing *et al.* 1993	648	549 85%			75 12%	23 3%			1 <1%	
Refaim Valley	Hill Country	MB II House	Horwitz 1989b	254	166 65%			47 19%	21 9%	19 7%			
Shiloh	Hill Country	MB III	Hellwing *et al.* 1993	630	549 87%			76 12%		1 <1%			4 <1%
Haror	Northern Negev	MB IIb	Klenck n.d.	1091	1024 94%	62 65%	33 35%	38 3%	5 <1%	1 <1%		23 2%	
Nagila		MB	Ducos 1968a	480	307 64%			142 30%	12 3%	6 1%		10 2%	3** <1%

Table 17.6. The Distribution of Economically Significant Mammalian Species in Late Bronze Age Samples.

Site	Region	Time	Ref.	No.	Sh/Go	Sheep	Goat	Cattle	Pig	Equid	Camel	Gazelle	Deer
Kamid el-Loz	Lebanon Mountains	LB	Bökönyi 1990	9856	6235 63%	821 59%	559 41%	3135 32%	90 1%	125 1%		20 <1%	251 2%
Kinrot	Galilee	LB	Hellwing 1988/9a	434	280 65%			133 31%	8 2%	7 2%			6 1%
Shiloh	Hill Country	LB	Hellwing *et al.* 1993	2954	2623 89%			253 9%	5 <1%	6 <1%	(1)	1 <1%	65 2%
Lachish	Hill Country	LB	Tchernov & Drori 1983	NR	68%			23%	7%	2%			
Nahariya	Coast	LB	Ducos 1968a	785	691 88%			93 12%	1 <1%				
Harasim	Shephelah	LB II	Horwitz 1996f	1194	711 62%			420 37%	8 <1%	5 <1%		3 <1%	1 <1%
Miqne-Ekron	Shephelah	LB Str VIII	Lev-Tov 2000	1962	1372 70%	87 50%	86 50%	525 27%	59 3%	3 <1%		1 <1%	2 <1%
Miqne-Ekron	Shephelah	LB Str IX	Lev-Tov 2000	261	202 77%	18 75%	6 25%	57 22%	1 <1%				1 <1%
Halif	Northern Negev	LB	Zeder 1990	3236	NR 78%	NR 50%	NR 50%	NR 15%	83 3%	69 5%		18 <1%	
Jemmeh	Southern Coast	LB	Wapnish 1987	4021	3250 81%	349 71%	144 29%	687 17%	12 <1%	29 <1%	5 <1%	38 1%	
Timna	Sinai	14th–12th Temple	Lernau 1988	3146	3146 100%	142 56%	113 44%						

Table 17.7. The Distribution of Economically Significant Mammalian Species in Early Iron Age Samples.

Site	Region	Time	Ref.	No.	Sh/Go	Sheep	Goat	Cattle	Pig	Equid	Camel	Gazelle	Deer
Shiloh	Hill Country	Ir I	Hellwing *et al.* 1993	1331	1014 76%			306 23%	1 <1%	2 <1%		1 <1%	7 <1%
City of David	Hill Country	12th- 11th	Horwitz 1996c	1375	1226 89%	less	more	139 10%	3 <1%			4 <1%	3 <1%
Ai	Hill Country	Ir I	Hesse 1991	165	140 85%	17	13	24 15%		1 <1%			
Raddana	Hill Country	Ir I	Hesse 1991	536	431 80%	35	39	85 16%	1 <1%	2 <1%		5 1%	12 2%
Beth-Shemesh	Shephelah	Ir I 12th	Hesse *et al.* 1977	1846	1539 83%	131 55%	106 45%	282 15%	4 <1%			1 <1%	20 1%
Beth-Shemesh	Shephelah	Ir I 12th	Hesse *et al.* 1977	355	220 80%	34 52%	32 48%	64 18%					5 1%
Miqne-Ekron	Shephelah	Ir I	Hesse 1986	502	226 45%	87%	13%	186 37%	90 18%				
Miqne-Ekron	Shephelah	Ir I Str IV	Lev-Tov 2000	619	337 54%	32 71%	13 29%	232 37%	42 7%	4 <1%			4 <1%
Miqne-Ekron	Shephelah	Ir I Str V	Lev-Tov 2000	2355	807 37%	71 65%	39 35%	954 41%	575 24%	9 <1%			10 <1%
Miqne-Ekron	Shephelah	Ir I Str VI	Lev-Tov 2000	1485	596 40%	28 47%	31 53%	518 27%	348 23%	8 <1%		8 <1%	7 <1%
Miqne-Ekron	Shephelah	Ir I Str VII	Lev-Tov 2000	2780	1385 50%	93 51%	89 49%	921 33%	357 13%	99 4%		8 <1%	10 <1%

Table 17.7. Cont.

Site	Region	Time	Ref.	No.	Sh/Go	Sheep	Goat	Cattle	Pig	Equid	Camel	Gazelle	Deer
Kamid el-Loz	Lebanon Mountains	IA I	Bökönyi 1990	2050	1031 51%	110 54%	95 46%	663 32%	46 2%	244 12%		13 <1%	53 2%
Hesban	Jordan Plateau	Ir I	LaBianca 1990	666	460 69%	38 57%	29 43%	145 22%	31 4%	19 3%	3 <1%	11 2%	3 <1%
Dan	Galilee	Ir I Early Phase	Wapnish 1993	NR	83%			17%					
Dan	Galilee	Ir I Late Phase	Wapnish 1993	NR	51%			49%					
Hazorea	Carmel	Ir I	Horwitz 1986/7	736	632 86%			79 11%	14 2%	2 <1%		4 <1%	5 <1%
'Izbet Sartah	Coastal Plain	12th	Hellwing & Adjeman 1986	285	148 52%	? 100%		122 43%		3 1%	(1)		9 3%
'Izbet Sartah	Coastal Plain	11th	Hellwing & Adjeman 1986	378	175 63%	? 100%		88 32%		4 2%	(101)		10 4%
'Izbet Sartah	Coastal Plain	10th	Hellwing & Adjeman 1986	208	141 68%	? 100%		58 28%				1 <1%	8 4%
Qasile	Coast	12th–11th	Davis 1985	252	212 84%	25 68%	12 32%	35 14%	4 2%		1 <1%		1 <1%
Jemmeh	Southern Coast	Ir I	Wapnish 1987	1432	1113 78%	112 72%	43 28%	280 20%	3 <1%	25 2%	2 <1%	7 <1%	
Mount Ebal	Hill Country	Ir I	Horwitz 1986/7	741	499 67%	11 44%	14 56%	164 22%					78 11%

Table 17.7. Cont.

Site	Region	Time	Ref.	No.	Sh/Go	Sheep	Goat	Cattle	Pig	Equid	Camel	Gazelle	Deer
Masos	Negev	Ir I	Tchernov & Drori 1983	417	278 67%			109 26%	1 <1%	13 3%		6 1%	10 2%
Beersheba	Negev	Ir I	Hellwing 1984	1215	1010 83%			164 13%	3 <1%	24 2%		6 <1%	8 <1%
Arad	Negev	Ir I	Sade 1988	361	294 81%			64 18%	3 1%				

Note: Samples in () are likely intrusive and not included in the percentages.

Table 17.8. The Distribution of Economically Significant Mammalian Species in Late Iron Age Samples.

Site	Region	Time	Ref.	No.	Sh/Go	Sheep	Goat	Cattle	Pig	Equid	Camel	Gazelle	Deer
Hesban	Jordan Plateau	Ir II	LaBianca 1990	1791	1406 79%	137 62%	83 38%	256 14%	94 5%	29 2%	5 <1%		1 <1%
Madaba	Jordan Highlands	Ir II	Harrison *et al.* n.d.	604	538 84%	88 86%	14 14%	63 10%	1 <1%	2 <1%			
Bab el-Hawa	Golan Heights	9th-8th House	Raphael & Lernau 1996	350** + Gallus	214 61%			87 25%	6 2%	P		5 1%	38 11%
Tell el-'Oreme	Galilee	10th-8th	Ziegler & Boessneck 1990	3336	1312 39%	256 56%	199 44%	1509 45%	66 2%	45 1%	6 <1%	70 2%	328 10%
Dan	Galilee	9th-6th Domest	Wapnish & Hesse 1991	644	238 37%	28 56%	22 44%	279 43%	4 <1%	18 3%		5 <1%	102 16%
Dan	Galilee	9th-8th Altar	Wapnish & Hesse 1991	657	448 68%	38 49%	39 51%	170 26%		8 1%		3 <1%	28 4%
Qiri	Jezreel	Ir I/II	Davis 1987	970	793 81%	50%	50%	142 17%	14 1%	2 <1%		6 <1%	13 1%
Michal	Coast	10th	Hellwing & Feig 1989	366	239 65%			123 34%	3 <1%		1 <1%		
Hamid	Coastal Plain	8/7th	Griffith & Hesse 1999	503	274 54%	30 81%	7 19%	193 38	23 5%	6 1%	3 <1%	1 <1%	3 <1%
Ashkelon	Coast	7th	Hesse data	3451	3101 90%	423 80%	105 20%	293 9%	19 <1%	20 <1%		13 <1%	5 <1%

Table 17.8. Cont.

Site	Region	Time	Ref.	No.	Sh/Go	Sheep	Goat	Cattle	Pig	Equid	Camel	Gazelle	Deer
Shiloh	Hill Country	Ir II	Hellwing *et al.* 1993	146	99 68%			41 28%	3 2%				3 2%
City of David	Hill Country	10th	Horwitz 1996c	679	574 85%	equal	equal	99 14%	1 <1%	2 <1%		1 <1%	2 <1%
City of David	Hill Country	8th	Horwitz 1996c Horwitz & Tchernov 1996	396 + Gallus?	309 78%	equal	equal	82 21%	2 <1%	1 <1%		1 <1%	1 <1%
Miqne-Ekron	Shephelah	Ir II Str II/III	Lev-Tov 2000	1631	1192 73%	79 61%	50 39%	346 21%	80 5%	10 <1%		2 <1%	1 <1%
Miqne-Ekron	Shephelah	Ir II Str Ic/Ib	Lev-Tov 2000	1042	736 70%	93 78%	37 22%	271 26%	19 2%	10 1%		1 <1%	5 <1%
Jemmeh	Southern Coast	8th/7th	Wapnish 1987	1059	845 80%	110 80%	27 20%	131 12%	11 1%	19 2%	48 5%	5 <1%	
Halif	Northern Negev	Ir II	Zeder 1990	1087	NR 84%	NR 66%	NR 34%	NR 15%	1 <1%	1 <1%			20 <1%
Horvat Qitmit	Negev	Ir II Edom Cult	Horwitz & Raphael 1995	321	298 93%			23 7%					

Table 17.9. Distribution of Economically Significant Mammalian Species in Persian Samples.

Site	Region	Time	Ref.	No.	Sh/Go	Sheep	Goat	Cattle	Pig	Equid	Camel	Gazelle	Deer
Yoqneam	Mount Carmel	Persian	Horwitz & Dahan 1996	79 + Gallus	42 53%			34 43%	2 3%				1 1%
Michal	Coast	Persian	Hellwing & Feig 1989	3010	1799 60%			1136 38%	12 <1%	42 1%	21 <1%		
Ashkelon	Coast	Persian	Lipovitch 1999	2919	2489 85%	262 78%	73 22%	154 5%	11 <1%	35 1%	39 1%	111 4%	80 3%
Jemmeh	Southern Coast	Persian	Wapnish 1987	1072	791 74%	104 83%	21 17%	154 14%	9 1%	15 1%	102 10%	1 <1%	
Hesi	Northern Negev	Persian	Bennett & Schwartz 1989	784	596 76%	139 80%	34 20%	122 16%	14 2%	28 4%	10 1%	4 <1	10 1%
Halif	Northern Negev	Persian	Zeder 1990	449	NR 77%	NR 62%	NR 38%	NR 16%	1 <1%	1 <%	20 4%	4 <1%	33*

* = *Alcelaphus buselaphus*)

Table 17.10. The Distribution of Economically Significant Mammalian Species in Hellenistic Samples.

Site	Region	Time	Ref.	No.	Sh/Go	Sheep	Goat	Cattle	Pig	Equid	Camel	Gazelle	Deer
Michal	Coast	Hellen	Hellwing & Feig 1989	489	327 67%			144 29%		12 2%	6 1%		
Shiloh	Hill Country	Hellen	Hellwing *et al.* 1993	100	62 62%			32 32%	1 1%	1 1%			4 4%
Yoqneam	Mount Carmel	Hellen	Horwitz & Dahan 1996	94	25 27%			51 54%	15 16%	1 1%	1 1%	1 1%	
Jemmeh	Southern Coast	Hellen	Wapnish 1987	2898	1965 68%	190 75%	65 25%	681 23%	21 <1%	56 2%	172 6%	3 <1%	
Anafa	Galilee	Hellen	Redding 1994	462	203 44%	12 80%	3 20%	162 35%	57 12%	10 2%		2 <1%	28 6%
Hesban	Jordan Plateau	Late Hellen	LaBianca 1990	1138	977 86%	135 64%	75 36%	136 12%	6 <1%	4 <1%	15 1%		

Table 17.11. The Distribution of Economically Significant Mammalian Species in Roman Samples.

Site	Region	Time	Ref.	No.	Sh/Go	Sheep	Goat	Cattle	Pig	Equid	Camel	Gazelle	Deer
Michal	Coast	Hasmo Roman	Hellwing & Feig 1989	346	225 65%			111 32%	6 2%	2 <1%	2 <1%		
Horbat Rimmon	Shephelah	Early Roman	Horwitz 1998c	93 + Gallus	81 87%			11 12%	1 1%				
City of David	Hill Country	Early Roman	Horwitz 1996c	980 + Gallus	688 70%	equal	equal	284 29%		1 <1%			7 1%
Hesban	Jordan Plateau	Roman	LaBianca 1990	3309	2574 78%	207 58%	151 42%	417 13%	226 7%	68 2%	24 <1%		
Anafa	Galilee	Roman	Redding 1994	683	318 47%	25 86%	4 14%	186 27%	138 20%	5 1%	1 <1%	1 <1%	34 5%
Shiloh	Hill Country	Roman	Hellwing *et al.* 1993	150	113 75%			31 21%	4 3%				2 1%
Khirbet Ibreiktas	Coast	Late Roman Well	Horwitz & Meinis 1998	124 + Gallus	54 44%			19 15%	1 <1%	50 40%			

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APPENDIX

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[1]Key to subject indexing:

Am	amphibians
Arth	arthropods: including insects, arachnids, ectoparasites
B	birds
F	fish
Genl	general works
Misc	miscellaneous: echinoderms, earthworms, coral, sharks
Ml	mollusks
Mm	mammals
R	reptiles

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INDEX

A

Aardvark, 132
Abomasum, 11
Abraham, 417
Abydos, 342, 450
Acacia trees, 114
Acemhöyük, 85, 90, 93, 95
Achdari, Syrian, 18. *See also* Onager
Acrididae, 40
Adaptation, fauna, 6; flora, 5
Addax, 21, 113, 135. *See also* Antelope
Adder, 299
Admonitions of Ipuwer, 263
Adonis, 333
Aegean, 212, 213; bestiary, 226
Aesop, 257
Aetokremnos, 15, 35
Ahuramazda, 180, 192, 193
Ai, 233, 468
'Ain Ghazal, 215, 232
Ajjul, 225
Akītu-festival, 373, 393, 400
Alaca Höyük, 81, 86, 87, 90, 310–11, 316; animal standards, 83, 92, 310, 311, 316
Alalakh, 213
Alexander the Great, 145, 168, 170
Alişar Höyük, 93
Alluḫappu, 361
Amduat, 343
Amenhotep III, 442
Amman, 233
Ammet, 339, 344
Amos: 2:7–8, 411; 3:14, 411; 3:8, 301; 4:9, 303; 5:18–19, 298; 5:21–27, 411
Amulets, 93, 95, 152, 333, 339, 342, 352, 355, 410; against snakes, 184; cow-headed snake, 339; eye of Horus, 346; zoomorphic, 104
Amun, 339, 341; domain of, 348; Re, 269
Amunhotep III, 348
Anat, 300, 302, 303, 408, 410; and heifer, 221, 300
Animal behavior in ritual, 328, 329
Animal caricatures, 124
Animal cults, 9, 103, 355–58
Animal hieroglyphs, 102, 251
Animal imagery, in art, 89, 98, 183, 344; in literature, 250, 251, 260, 262, 264, 266, 269, 281–83, 297–302
Animal interment, 8, 27, 287, 326–27, 445, 457. *See also* under specific animals
Animal language, 284; baboon, 254; jackal, 255; wolf, 255
Animal masks, 328–29, 341; of Anubis, 341; jackal-headed, 341; lion-headed, 341
Animal musicians, 125, 181
Animal products, 105, 129, 147, 273, 390, 436, 440, 441, 466, 472
Animal statues, 100, 117, 149, 191, 197, 200, 357
Animal symbolism in art, 157–64
Animal-men, 250, 328–29
Animals: apotropaic, 85, 87, 88, 93, 95, 161, 165, 198, 248; aquatic, 225; composite (*see* Fantastic creatures; and under specific animals); as divine attributes, 80, 81 (*see also* under specific animals); as divine epithets, 269; as divine pedestals, 86, 231, 339, 368 (*see also* under specific animals); domestic, 105, 107, 124, 130, 238, 242–43, 243, 272, 274, 290, 291, 294, 297, 314, 320, 322, 325, 365, 392, 411, 412, 415, 430; draft, 105, 392; as epithets, 265, 267–69; exotic, 126, 127, 166, 285–86, 292–93, 453; game, 97, 112, 241, 250, 328, 427, 428; as grave goods, 457; herd, 263, 268, 433–35; horned, 159, 222; in humor, 181, 287; marine, 83, 133, 273; marsh, 166; mummified, 357; with names, 265; personified, 126, 160, 180–83, 253–55, 279–81; as political gifts, 166; in ritual, 314, 320; sacred, 104, 314–16; speaking, 246, 253–55, 284; terrestrial, 272; as tribute, 127, 129, 131; venomous, 352, 422; wild, 99, 110, 130, 238,

242, 243, 249, 267, 268, 273, 274, 290, 322, 325, 327–28, 411, 412
"Animals of the Gods", 250, 328
Anitta, 250
Anitta Chronicle, 250
Anshan, 176
Ant, 237, 242, 274, 282, 294, 295, 322; red, 365, 368
Antelope, 11, 21, 97, 98, 273, 290, 427, 449; roan, 128, 135
Anthropomorphism, 336, 362
Antilopinae, 22. *See also* Antelope
Antlers, 24–26, 83, 92, 202, 231; palmate, 26
Anu, 380, 391, 401
Anubis, 103, 336, 341, 344, 357
Anunnaki, 282, 374, 380, 381
Anzû, 282, 361; and Ninurta, 368
Aoudad. *See* Sheep: barbary
Apadana, 183, 189, 200, 203, 204, 208
Ape, 254, 262, 293, 363; mummified, 359
Apiaries, 110
Apiculture, 110, 452–53
Apis bull, 102, 335, 355–57, 447; in divination, 349
Apollo, 333
Apophis, 340, 343, 344
Apotropaia, 380; wands, 351
Arabia, 203
Arabian tahr, 13
Arad, 233, 419, 470–72
Aramaic, 271
Archaeozoology, 8, 9, 24, 461
Ark of the Covenant, 306, 408
Arsham, Satrap of Egypt, 207, 292
Arslan Tash, 234
Artistic stereotypes, 152, 165–66
Asakku-demon, 368, 386
Asherah, 407, 410
Ashkelon, 215, 408, 419
Asiatic gods, 339
Asp, 298
Ass, 16, 262, 278, 299, 380; African, 17, 134; Asian, 17–18; Nubian, 17; Somali, 17; wild, 362. *See also* Donkey
Aššur, 370
Assurbanipal, 166; palace of, 166
Assurnasirpal II, 287; palace of, 166
Assyrian annals, 181
Astarte, 302, 410
Astragali in divination, 420.
Atum, 339, 343
Atys, 333
Augury, 238, 319, 420. *See also* Divination
Aurochs, 15, 97, 135, 160, 166, 220, 237, 427, 428
Avesta, 180, 204
Aviaries, 110, 252, 357, 453
Avocet, 138
Azazel, 418

B

Ba, 344, 355
Baal, 221, 225, 299–301, 305, 407, 408, 415, 417; and bull imagery, 407; and heifer, 407. *See also* Myth of Baal
Baboon, 129, 259, 454; Anubis, 133; in art, 226; in cosmology, 343, 344; hamadryas, 103, 104, 133; and Hapi, 346; language of, 254; mummified, 357, 358; olive, 133; as pet, 117; and Thoth, 340, 344, 456; votive, 100
Baboon deity, 100, 103
Babylon, 296, 298
Bactria, 203
Badger, 295, 383; honey, 134
Bahram Yašt, 204, 207
Balaam, 304
Balkans, 222
Bandicoot rat, as offering, 389, 390, 392
Bastet, 102, 340, 357, 449
Bats, 30–32, 133, 271, 340; Egyptian rousette, 31
Bear, as gift, 286; in literary imagery, 242, 244, 250, 298; in ritual, 329, 328; Syrian, 128, 131, 133, 136; in tales, 256; trained, 287
Bear-men, 250, 328
Beast of Erymanthus, 14
Beasts of burden, 105, 446–48; domestication of, 470–72
Beasts of the steppe, 277
Beaver, 30
Bedouin, 414
Bee, 242, 296; in diet, 40; as divine attribute, 314, 315; in literary imagery, 244, 303; in myth, 245, 246; wax, 245, 246. *See also* Honeybee
Bee-eater, 139
Beef, 249, 393–95, 436
Beehive, 297
Beekeeping, 39, 105, 110, 297, 303, 452

Beetle, 104; click, 142; jewel, 142; rhinoceros, 142; scarab, 104, 336
Behemoth, 224
Beit el-Wali, 130
Bel, 362, 380. *See also* Baal
Belt Cave, 28
Beni Hasan, 114, 451
Benu-heron, 343
Berber peoples, 450
Bes, 339, 341, 351, 352
Beth Shean, 213, 293
Bethel, 408
Bethsaida, 408
Bird and Fish, disputation, 279, 281, 389; in tales, 280
Bird-headed sages, 363
Birdcall Text, 275, 279
Birdmen, 362
Birds, 32–37, 129, 171, 247, 252, 255, 273, 274, 290, 348, 427; in art, 81, 95, 98, 100, 150, 158, 166, 185, 225–26; in composite creature, 344; in diet, 249, 287; in divination, 238, 274; as divine attributes, 216, 275, 332, 368; domesticated, 453; exotic, 126; and fish, 8, 263, 273, 428; in food taboos, 393; in literary imagery, 242, 261, 262, 264, 268, 276, 281, 282, 294; migratory, 32–35, 453; as offerings, 389, 390, 402; as pets, 121; of prey, 36, 83, 87, 154, 164, 225, 250, 268, 269, 298, 301, 316, 332, 333, 411; range, 33; in ritual, 326, 349, 371, 372, 386; sacrifice, 8, 321, 416, 418; symbolism of, 334, 349, 422; wild, 351
Bison, 15, 237
Bitch, 278, 362, 371. *See also* Dog
Bittern, 136
Black Obelisk of Shalmaneser, 166
Black Sea, 4
Blackcaps, 35
Blood in ritual, 321, 325, 375, 376, 378, 386, 413, 416
Boar, in art, 95, 185; at Çatal Höyük, 310; as epithet, 304; Kalydonian, 14; in literary imagery, 283; in myth, 333; in ritual, 323, 328; symbolism of, 333; wild, 14, 222, 250, 440
Boghazköy, 93, 95, 247
Bolus, 11
Book of the Dead, 259, 344, 435
Book of Gates, 343, 344, 442
Book of the Heavenly Cow, 343, 344
Bosporus, 4
"Botanical Garden", 129–130
Bovines, 81, 147, 150, 194, 216
Breeds, 9; cattle, 106; dog, 116; sheep, 108
Bubastis, 449
Buchis bull, 355, 356
Bucrania, 84, 150, 156, 158, 359
Buffalo, 286, 299
Buhen, 448
Bull, of Adad, 164, 368; in art, 80, 83, 86, 89, 93, 95, 104, 160, 181, 183, 189, 192–97, 199, 201–3, 220, 331; black, 381; calves, 159; at Çatal Höyük, 83, 309; in composite animal, 152; constellation, 343; as divine attribute, 90, 215, 220, 223, 299–300, 314; as divine epithet, 269; as divine pedestal, 90; as epithet, 304, 342; as guardian, 197; humped, 187; and kingship, 265, 266, 267; leaping, 106; in literary imagery, 197, 215, 240, 257, 261, 265, 268, 407–8; as offering, 389; at Persepolis, 199; in ritual, 349, 370, 379; as royal epithet, 265, 266, 360; sacrifice, 348, 380, 412, 415, 436; skulls, 84; and Storm God, 82, 87, 90; symbolism, of, 105, 158, 202, 203, 271; tail, 342; in tales, 260; wild, 201, 268, 283, 293, 299, 351, 371; as prey, 454; winged, 181; in Mesopotamia, 363
Bull drum, 379–82
Bull god, 87
Bull-man, 331, 364, 408; in art, 363; in ritual, 229
Bustard, great, 35
Butchery, 414, 435, 436, 438, 442, 459
Buthidae, 42
Butterfly, 112, 282; plain tiger, 143
Buzzard, 33; long-legged, 137
Byblos, 128, 213, 220, 224–26

C

Cain and Abel, 396
Calf, 189, 192, 204, 220, 263, 287, 298, 299, 367, 390, 402. *See also* Bull: calves; Cow: and calf
Cambyses, 335, 356
Camel, 11, 18–21, 446, 462, 471; in art,

147, 166, 203–4, 215; in diet, 411; domestication of, 466; interment, 359; in Iran, 170, 172; Pleistocene, 427. *See also* Dromedary
Camel driver, 203
Canopic jars, 346
Caprines, 81; domestication of, 466
Caracal, 134
Carchemish, 89, 331
Carnivores, 8
Carp, 140, 363
Carthage, 416, 418
Cat, in art, 124; and Bastet, 340; in composite creature, 344; in divination, 274; and dog, 449; domestic, 8, 27, 117, 134, 218, 449; Eurasian wild, 27; interment, 449; in literary imagery, 261, 263, 278; in magic, 351; as mouser, 449; mummified, 357; with name, 120; in omen, 269; as pet, 120, 449; as protector of Re, 264; sacrifice, 8, 120, 355; symbolism of, 120; in tales, 258, 264; tom, 264; and underworld imagery, 344; votive, 104; whiskers of, 355; wild, 27, 134, 281, 286, 383
Çatal Höyük, 82, 84, 87, 95, 309, 327
Caterpillars, 237, 274
Catfish, 38, 43, 44, 430, 434; bagrid, 141; clarid, 141; electric, 141; mudfish, 44; on Narmer palette, 44; ngaru, 44; Nile, 428, 430; North African, 44; schilbeid, 141; upside-down, 141; vundu, 44
Cattle, 11, 147, 238, 252, 348, 431; in art, 130, 154, 166, 185, 220–21, 449; branding, 445, 446; breeds, 434; in diet, 106, 436; in divination, 274; domestic, 15, 105–6, 136, 197, 462; domestication of, 466; drives, 444; Egyptian, 434–38; in faunal remains, 467; as gift, 286; hornless, 435; humped, 131 (*see also* Zebu); large, 434; in literary imagery, 244, 261, 263, 267; long-horned, 97, 435; mummified, 8; as offering, 347, 402; in ritual, 472; sacrifice, 106; short-horned, 435; symbolism of, 221; wild, 15, 263, 267, 268, 272, 286, 454
Cedar Forest, 230
Centaur of Pabilsag, 368
Centipede, 142
Centropomidae, 43
Cervids, 216, 465. *See also* Deer
Cetaceans, 29
Chamber of the Seasons, 103, 110, 111, 452
Chameleon, 274; European, 139
Chamois, hook-horned, 13
Chariot, 124, 146–48; divine, 80, 87, 368, 370, 371, 387, 391, 407, 409; in hunt, 113, 220, 226, 229, 230; interment, 392; pulled by cattle, 215; pulled by donkeys, 447; pulled by horses, 107, 206, 218, 229, 471
Charioteers, 355
Chariotry, 147, 446, 471
Cheetah, 129–31, 134; as pet, 121
Cherubim, 306, 405, 407, 408
Chicken, 132, 373, 462; domestic, 36
Chiffchaffs, 35
Chiroptera, 30
Choga Zanbil, 197
2 Chr: 7:5, 412, 9:21, 293, 11:15, 306; 29:21–22, 32, 412
Chthonic imagery, 176, 178, 180, 198
Chukar, 35
Cichlidae, 44
Cippi, 352
Clariidae, 44, 430, 431
Climate, 3–7, 34, 428; in Egypt, 5
Cobra, 164, 224, 340, 342; black-necked spitting, 140; Egyptian, 140; winged, 339
Cock, 171, 334
Columbaria, 412
Constellations, 343; Capricorn, 368; Leo, 202; Sagittarius, 368; Taurus, 202. *See also* under specific animals
Coot, European, 138
Cormorant, 34, 136
Covenant, 417
Cow: and calf, 204, 220, 286, 300, 367; celestial, 343; divine, 344; and Hathor, 336, 341; in literary imagery, 239, 242, 263; in literature, 298; in myth, 248, 344; sacrifice, 416; of Sîn, 367; speaking, 284; in tales, 255–57; wild, 274
Cow goddess. *See* Hathor
Cowshed, 159
Crab, 83, 369, 374
Crane, 36, 110, 114, 294, 453; common, 138; demoiselle, 138

Cricket, 237, 274
Crocodile, 15, 37–38, 223–24, 293; apotropaion, 352; in art, 111, 343; in composite creature, 344; constellation, 343; cult of, 357; in literary imagery, 261, 263; in magic, 352; mummified, 8, 357; Nile, 37, 97, 103, 104, 139; sacred, 357; transformation into, 259; votive, 100
Crow, 125, 139, 276
Cuckoo, great spotted, 130, 138
Cult images, 90, 92, 93, 177, 198; zoomorphic, 92
Cybebe. *See* Kebaba
Cybele, 83, 309
Cynopolis, 452
Cyprus, 35, 212, 225
Cyrus of Anshan, 207
Cyrus the Great, 207

D

Dagan, temple of, 146, 161
Daily life, 105
Dar-bird, 276
Darius I, 178, 181, 356
Darter, 34, 130, 136
Dassy. *See* Hyrax
Daughter of Re, 254, 259
David, 296, 301
Day of Atonement, 377
Day of Yahweh, 298
Deer, 11, 24–26, 135, 247; Anatolian fallow, 25; in art, 83, 202, 222; at Çatal Höyük, 310; cult, 311; in diet, 290; as divine attribute, 314, 331; fallow, 25, 286, 464; in faunal remains, 462, 464, 467; in literary imagery, 244, 295; Persian fallow, 25; as prey, 250; red, 25, 286, 464; in ritual, 328; roe, 25, 290; sacrifice, 392, 416, 419; standards, 311, 328. *See also* Cervids
Deir el-Bahari, 124, 128, 133, 359
Deir el-Medina, 124, 125, 447
Delphi, 30
Demons, 95, 271, 273, 361, 375, 377, 382, 383, 387, 395
Demotic, 255
Dendera, 341
Desert kites, 23
Deut: 14:3–21, 290, 411; 14:5, 412; 17:1, 412; 21:1–9, 416; 32:11, 300; 33:17, 300
Diet, 287, 438
Dietary prohibitions, 40, 249. *See also* food taboos
Dinka, 446
Diodorus, 335; I.83, 335; I.84, 357; I.85, 356
Diver, 130, 136
Divination, 238–39, 271, 274–75, 294, 319, 334, 349, 364, 370, 420. *See also* Augury; Extispicy; Ichthyomancy; Lecanomancy; Oracles
Dog, 116, 129, 218, 245, 272; apotropaion, 364, 369; in art, 154, 208–9, 213, 449; bark of, 243; breeds, 450–51; cape hunting, 134; commensal, 8; in composite creature, 339, 344; in diet, 249, 452; in divination, 274, 275, 365; domestic, 81, 116, 134, 357; domestication of, 26; feral, 255; greyhound, 116, 451; guardian, 208, 364, 452; of Gula, 154, 156, 208, 369, 393; herding, 280; in humor, 243; hunting, 97, 111, 116–17, 208, 218, 249, 261, 293, 328, 451; imported, 117; impurity of, 243, 322, 323, 369; interment, 287, 369, 452, at Ashkelon, 419, in Nubia, 359; and Lamaštu, 362; in literary imagery, 240, 242, 257, 276, 278, 283, 286, 292, 294, 301–3; in literature, 248; in magic, 371; mastiff, 208; in medicine, 322, 423; mummified, 357, 450; with names, 117, 451–52; pariahs, 451; as pet, 116, 117, 449–52; rabid, 362; in ritual, 209, 382, 383, 386; sacrifice, 348, 418, in Gula temple, 369; saluki, 116, 185; symbolism of, 208, 241; as tribute, 208; votive, 369; wild, 265; and wolf, 280; in Zoroastrian belief, 209. *See also* Puppy
Dog-men, 249, 250, 328
Dolphin, 29, 30, 132, 299; bottle-nosed, 29
Domain of the White Sow, 443
Domestication, 81, 97, 463, 465–66. *See also* under specific animals
Donkey, 129, 218; in art, 106, 124, 470; attitudes towards, 447; as beast of burden, 106, 220, 446–47; breeding, 447; in divination, 274, 365; as divine attribute, 368; domestic, 134, 470,

471; domestication of, 17, 466; in faunal remains, 462, 464, 467; as gift, 286; in humor, 124; interment, 359, 473; and Lamaštu, 362; in literary imagery, 242, 261, 262–64, 285; in literature, 291; as offering, 392; personified, 304–5; for riding, 106, 124, 446; in ritual, 383; sacrifice, 392, 400, 417, 473; stubborness of, 106; in tales, 256; treatment of, 447; wild, 470. *See also* Ass
Donkey god, 91
Dove, 110, 225, 276, 297, 349, 365, 374, 413. *See also* Pigeon
Dragon of Marduk, 164–65, 368, 369
Dragonfly, 142, 282
Dromedary, 20, 107, 204, 362. *See also* Camel
Druze villagers, 459
Duck, 453; in art, 110, 114, 154, 189, 225; in literature, 247; as offering, 348, 390, 392; as pet, 123; pintail, 349; in ritual, 372, 373; tufted, 138
Duck-weights, 150, 164
Dumuzi, 376, 385
Dur-Kurigalzu, 156
Dwaumutef, 346
Dye, Tyrian Purple. *See* Murex

E

Ea, 368
Eagle, 33; in art, 87, 89, 95, 185, 225, 246; in composite creature, 306; divine, 246; as divine attribute, 226; as divine messenger, 246; and kingship, 316–18; in literary imagery, 246, 300–301; in literature, 247; in myth, 244, 245, 246; with names, 246; in ritual, 326; as royal attribute, 240, 241; and serpent, 281; speaking, 246; in tales, 281
East African Rift System, 4
East European flyway, 33
Eccl: 9:4, 303; 10:8, 295; 10:11, 295
Edfu, 348
Eel, Egyptian, 141
Egg of creation, 266, 343
Egret, 36, 136; cattle, 36
El, 221, 304, 407, 408
El Jisr, 229, 233
Elam, 176–78, 180, 181, 198, 200, 390
Elburz Mountains, 4, 12
Elephant, 128, 200, 222, 223–24, 273, 274, 285, 286; African, 26, 97, 98, 134; Asiatic, 26; pygmy, 26; Syrian, 26, 131, 134; tusks of, 285. *See also* Ivory: elephant
Elephantine, 292, 303
Ellil, 374, 380
Eloquent Peasant, 256
Emar, 391
En Shadud, 468
Enkidu, 284
Enkomi, 230
Enlil and Namzitarra, 284
Enmešarra, 369
Environment, change, 46; Egypt, 427–28; Iran, 172; Mesopotamia, 145
Ephesus, 333
Epic of Gilgamesh, 249, 276
Equids, 148, 151, 153, 154, 166, 291, 427, 428; interment, 287, 473
Ereškigal, 384
Erra, 277
Eructation, 11
Esau, 293
Estivation, 7
Etana, 281
Ethiopia, 129
Evil, 362
Ewe, 278, 297, 385; and lamb, 286; in ritual, 322, 385; sacrifice, 399, 416; as scapegoat, 324
Exod: 9:3, 290; 10, 40; 15:15, 304; 19:4, 300; 22:9, 290; 22:31, 292; 23:4, 291
Extispicy, 319, 349, 370, 397–99, 420. *See also* Divination
Eye of Horus, 349
Ezek: 1:4–11, 306; 10, 305; 10:14, 306; 13:4, 298; 16:10, 293; 17:2–6, 300; 17:3, 300; 17:7, 300; 19:1–9, 296; 20:15, 290; 31:11, 304; 34:31, 297; 46:4–7, 391
Ezra: 2:67, 290

F

Fabulous creatures. *See* Fantastic creatures
Falcon, in art, 87, 215, 225, 226; in composite creature, 253; in creation myth, 343; cult, 356; in divination, 349, 365; divine, 269; as divine attribute, 336, 346; Eleonora's, 36; Eurasian hobby, 36; Horus, 36, 103,

104, 137, 265, 341, 346; and kingship, 265–68; lanner, 36; in literary imagery, 266; in magic, 351; of Marduk, 368; pectorals, 346; peregrine, 36; in ritual, 377; sacred, 356; in tales, 259; transformation into, 259; votive, 100
Falcon-headed god, 336
Falconry, 249
Fantastic creatures, 83, 85, 95, 98, 128, 164, 165, 171, 181, 183, 189, 193, 218, 229–31, 248, 253, 305, 332, 339, 351, 361–64
Farming, 105, 431; pig, 442
Fawn, 276
Fayum, 430
Feathers, 152, 282, 339, 342, 347
Felines in art, 81, 147, 150, 154, 160; at Çatal Höyük, 82; and Cybele, 83; and Kubaba, 83; winged, 248
Fellowship Offering, 413
Festival of the Stag, 311
Fish, 43–44, 111, 238, 249, 252, 255, 273, 428; amulet, 352; in art, 95, 98, 100, 129, 154, 156, 158, 171; bone remains, 43; butterfly, 142; chthonic associations, 225; in composite creature, 253, 363; in diet, 43, 249; in divination, 274, 334 (*see also* Ichthyomancy); as divine attribute, 336; elephant-snout, 140; in faunal remains, 433; in food taboos, 393, 394, 443; in literary imagery, 261, 263; in literature, 284; Nile, 104; as offering, 389, 392, 402; in ritual, 326, 348, 369, 371, 373, 374, 386; in tales, 259; and Tiamat, 394; unicorn, 141
Fish-man, 363, 364
Fish-woman, 363
Fishing, 110–14, 225, 429–31; symbolism of, 349; tabooed, 394
Flamingo, 35, 99; greater, 137
Fledgling, 266
Flood Story (Akkadian), 282
Fly, 259, 261, 273, 282, 303. *See also* Housefly
Fly swatters, 232
Food taboos, 290, 333, 393–94, 411. *See also* Dietary Prohibitions
Fowl, 334, 395
Fowl yards, 252, 348
Fowler, 374
Fowling, 247, 431, 454; with boomerang, 111, 454; with bow and arrow, 454; with cats, 449; with clap-nets, 37, 114, 454; symbolism of, 349; with throwsticks, 37
Fox, 27, 273; divination, 274; in faunal remains, 427; fennec, 27; as gift, 286; in literary imagery, 240–42, 277, 298; in literature, 278; in magic, 351; red, 134; in ritual, 322; Rüppell's, 27
Freewill Offering, 396. *See also* Fellowship Offering
Frog, 140, 238; amulets, 352; in art, 85, 100, 104; chthonic associations, 225; as epithet, 264; green, 373; impurity of, 325; in literature, 244; in magic, 351; in myth, 242; in ritual, 373, 386; sacrifice, 357
Funerary offerings, 326–27, 334, 347, 393, 402
Funerary ritual, 344–47

G

Gallinule, 37; purple, 138
Game parks. *See* Zoological (game) parks
Gamgam-bird, 283
Gander, 260
Garden of Eden, 304
Gazelle, 21, 37, 273, 465; in art, 83, 93, 187, 222; in composite creature, 344, 363; dama, 23; in diet, 290; in divination, 274; dorcas, 23, 113, 135; as epithet, 304; in faunal remains, 427, 462, 464, 466, 467; as gift, 286; and goddess, 410; goitered, 23; in literary imagery, 276, 277, 295, 367; in literature, 276; in magic, 352; marica, 23; mountain, 23; in myth, 362; Persian, 130, 135; as pet, 121; as prey, 23, 250, 293, 428; range, 22–24; in ritual, 328, 372; sacrifice, 392; slender-horned, 135; Soemmering's, 135; tamed, 453. *See also* Antilopinae
Gecko, 274; Egyptian/Turkish, 139
Gen: 3:1–4, 304; 4:3–5, 396; 4:4, 8:10, 412; 10:9, 293; 12:16, 290, 291; 15, 401; 15:9–10, 17–18, 417; 21:20, 293; 24:35, 291; 27:3, 293; 27:3–4, 293; 30:43, 290, 291; 32:5, 291; 32:7, 290; 41:1–32, 294; 42–45, 291; 43:11, 297; 49:24, 408
Genet, common, 134

Genies, winged, 287
Gerenuk, 130, 135
Germanicus, 349
Ghor-khar, Iranian, 18. *See also* Onager
Gilgamesh, 287, 378
Giraffe, 97, 128, 129, 130, 131, 135, 449
Glyptic, 312, 314, 407; Anatolian, 89; Elamite, 181; Iranian, 173, 174, 178, 183, 187, 198; Kassite, 154; Old Assyrian Colony period, 81, 89, 90, 91, 96; Sumerian, 150, 160; Syrian, 225; Syro-Palestinian, 216, 224; Urukian, 148, 159
Goat, 11–13, 147, 252, 431; in art, 81, 87, 107, 108, 149, 185, 221–22; billy, 287; breeds, 440; in composite creature, 361; in diet, 249; in divination, 365; domestic, 13, 136; domestication of, 466; in faunal remains, 462; as gift, 286; interment, 384; and Ištar, 379; and kid, 286; in literary imagery, 297; in literature, 247; mountain, 286; as offering, 391, 402; in ritual, 325, 374, 377–79, 384, 386; sacrifice, 187, 323, 397; scimitar-horned, 440; as substitute, 384; in tales, 278; wild, 10, 13, 83, 250, 290, 328. *See also* Sheep: and goat
Goat hair, 381, 383; in ritual, 379
Goat-demon, 306
Goat-fish, 364; of Ea, 368
Goatherd, 108
Golden Calf, 215, 408
Good shepherd motif, 160, 297
Goose, 252, 453; in art, 110, 114; bean, 137; as divine attribute, 341; Egyptian, 137; greylag, 36, 137, 453; in literary imagery, 254, 257, 262; Nile, 262; as offering, 348; as pet, 122; red-breasted, 137; in ritual, 372, 373, 376; white-fronted, 137, 453
Grasshopper, 40, 142, 225, 248, 274, 304
Grave goods, 83, 98, 100, 232
Great Cackler, 343
Greyhound, 450–51
Griffin, 89, 128, 154, 220, 229, 253, 259, 407; and kingship, 267; winged, 229
Griffon, Eurasian, 36
Guilt Offering, 397. *See also* Reparation Offering
Guineafowl, helmeted, 102, 138
Gula, 154, 208, 385; temple of, 369
Gull, 35

H

Habitat destruction, 7
Hacılar, 82, 93
Hamster, 376
Hannahanna, 242, 245, 314, 315
Hapi, 264, 346
Hare, 80, 83, 242, 249, 250, 411; desert, 104, 111, 133
Harpy Monument, 334
Hartebeest, 21, 262, 343, 464; bubal, 113, 135. *See also* Antelope
Hasanlu, 198, 205, 234
Hathor, 336, 339, 341, 347, 348
Hathor-Tetnut, *See* Daughter of Re
Hatmehyet, 336
Hatshepsut, 124, 128–29, 133
Hattuša, 79, 80, 82, 85, 87, 88, 239, 327
Hattušili I, 237, 239–241, 319
Hauran, 226
Hawk, 33, 298, 332, 357, 358
Hazor, 213, 298, 409, 472
Ḫazû-bird, 400
Hedgehog, 100, 133, 298, 336
Heifer, 297, 298, 300; sacrifice, 416
Hekat, 352
Heliopolis, 342
Helios, 355
Hemerologies, 393, 394
Hemiones. *See* Onager
Herbivores, 11
Herding, 97, 105, 145, 348, 411, 431, 441, 443–46, 458, 466. *See also* Pastoralism
Herds, divine, 370
Hermes, 331
Hermes Candaules, 333
Hero motif, 99, 174, 179, 183, 184, 223, 231
Herodotus, 36, 108, 206, 335, 355–357; I.34–44, 333; I.73, 332; I.84.3, 332; II.29, 335, 356; II.38, 436; II.47, 440; II.65, 355; II.66, 358, 449; V.102, 332
Heron, 36, 259, 280; gray, 136; night, 136
Hezekiah, 412, 421
Hierakonpolis, 434
Hind, 299
Hinny, 107, 135. *See also* Hule

Hippopotamus, 14, 135; in art, 97, 98, 100, 111, 125, 222–23, 340; constellation, 343; in magic, 351; as prey, 428, 454; pygmy, 15; symbolism of, 340; in tales, 259
Hippopotamus goddess, 229
Hippotraginae. *See* Antelope
Holocene, 465
Honey, 39, 246, 452
Honeybee, 38–40, 142, 171. *See also* Bee
Hoopoe, 37, 122, 139
Horns, 83, 152, 168, 231, 287, 309, 360; of bull, 86, 158, 159, 197, 266, 299, 304, 339; corkscrew, 440; of gazelle, 359; of goat, 13; of ibex, 185; as offering, 402; of ox, 106; of ram, 342; of rhinoceros, 130; of sheep, 12, 342, 343; of sheep and goats, 11; of Tiamat, 362
Horon, 422
Horse, 16, 107, 135, 170, 252, 266, 336, 470; in art, 147, 165, 215, 216, 218, 222, 409; bristles, 383; chariot, 323; in divination, 274, 365; as divine attribute, 410; domestic, 462, 470; domestication of, 466; as draft animal, 107, 218; in Egypt, 447–48; in faunal remains, 464, 467, 471; flying gallop motif, 152, 218; interment, 205, 327, 358, 359, 392; in Iran, 204–7; in literary imagery, 257, 262, 263, 264, 279, 291–92; Medean, 166; in military use, 239, 291, 446, 471; mummified, 359; as offering, 206, 392; as prestige animal, 287, 291–92; Przewalski's, 16; receiving offerings, 370; for riding, 107, 448; in ritual, 323, 327; symbolism of, 333; in tales, 256; training, 239, 287; as tribute, 165; wild, 470; and Yahweh, 407, 409
Horses, of Aššur, 370; of Marduk, 370; of Šamaš, 368, 370
Horus, 260, 336, 340, 348, 349, 357; on the Crocodiles, 352; and Seth, 260, 269; Son-of-Isis, 336
Hos: 10:11, 298; 10:5–6, 411; 13:2, 411; 5:1, 293; 5:14, 301; 7:12, 300; 8:1, 300; 8:5–6, 411
Housefly, 142
Humbaba, 230
Hunting, 7, 9, 14, 15, 23, 28, 34, 80, 87, 95, 97, 110–14, 127, 145, 160, 192, 231, 247, 249–50, 252, 285–86, 293–94, 427, 454; with bow and arrow, 166, 192, 249, 285; with clap-nets, 351; divine, 370; and magic, 97; narratives in art, 95; pits, 249; rituals associated with, 95, 154, 215, 327; royal, 113, 166, 220, 226, 229, 230, 250, 267, 268, 285, 293; with spear, 166, 249; symbolism of, 454; tabooed, 394. *See also* Fowling; Netting
Hunting god, 83, 93, 328
ḪURRI-bird oracles, 320
Husbandry, 9, 104, 147, 205, 222, 465–67, 469
Hydruntine, 18
Hyena, 113, 273, 276, 298; striped, 112–14, 134
Hyksos, 471
Hymn to the Aton, 264
Hymn to the Nile, 263
Hyrax, rock, 21

I

Ištar, 368
Ibex, 13, 466; in art, 184–92; in composite creature, 184; in diet, 290; and goddess, 368, 407, 410; headdress, 184; in humor, 183; in medicine, 184; Nubian, 13, 97, 99, 113, 135; tamed, 453; Walia, 13
Ibis, 261, 263, 340, 341, 357, 358, 453, 454; glossy, 136; hermit, 137; sacred, 36, 102, 104, 136
Icadius, 30
Ice Age, 3
Ichthyomancy, 334. *See also* Divination
Igigi, 381
Illuyanka, 95, 247, 331
İnandık, 90
Inanna, 159
Inanna/Ištar, 198, 199
Indian Ocean, 129, 133
Indo-Europeans, 311
Indus River, 170
Indus Valley, 15
Ini-Teshub, 89
Inorus, 339
Insects, 36, 111, 154, 171, 242, 264, 274, 282, 290, 303–4
Inshushinak, 164, 177, 180
Iran National Museum, 208

Isa: 1:3, 297; 1:24, 304, 408; 6:2, 305; 7:18–19, 303; 7:24, 293; 8:14, 293; 10:13, 299; 11:6–8, 299; 13:21, 306; 16:2, 300; 24:18, 293; 27:1, 305; 30:16, 292; 33:4, 303; 34:6, 290; 34:11, 298; 34:14, 306; 49:26, 304, 408; 51:9, 305; 56:10, 292; 56:10–11, 292; 65:25, 299; 66:3, 418
Isis, 339, 344, 346, 352
Isis-Hathor, 339
Ištar, 164, 248, 369, 376, 378, 379
Ivory, 92, 222, 223; elephant, 85, 231, 232–34; hippopotamus, 85, 232–34

J

Jackal, 102, 126, 256, 257, 298, 336, 339, 343, 344, 346, 427; desert, 341; golden, 27, 134
Jaffa, 419
Jer: 4:13, 300; 8:7, 294; 23:2, 297; 34:18–20, 400, 417; 46:23, 303; 48:44, 293; 49:16, 300; 49:22, 300; 49:33, 298; 50:17, 298; 50:39, 298; 51:27, 303
Jerboa, 133
Jericho, 222, 232, 233, 438, 473
Job: 1:3, 290, 291; 6:5, 294; 8:14, 303; 9:13, 305; 26:12, 305; 30:1, 292; 39:19–25, 292; 39:27, 300; 40:25, 305
Joel: 1–2:27, 40; 1:4, 303
Jordan, 471
Jordan River valley, 4
Joseph, 291, 294
Josiah, 409
Judg: 6:5, 303; 7:5, 303; 9:8–20, 304; 14:14, 296; 14:18, 297
Junglefowl, red, 36, 132, 138

K

Kamid el Loz, 225, 233
Kamrušepa, 238, 246
Kanesh. *See* Kültepe
Karhuha, 331
Kassite art, 154
Kestrel, 344; lesser, 137
Kfar Haharesh, 467
Khepri, 336, 343
Khepri-Atum, 343
Khirbet Kerak, 233
Khnum, 251
Khnumhotep III, 108
Khorsabad, 234
Khur, 18. *See* Onager
KI.LAM Festival, 250, 311, 328
Kid, 189, 190, 191, 252, 276, 298, 321
Kingfisher, 112, 139; pied, 37, 139
1 Kgs: 4:30–5:10, 260; 4:33, 289; 7:25, 408; 8:37, 303; 8:63, 412; 10:19–20, 301; 10:22, 293; 12:28, 408; 14:11, 292; 22:11, 300
2 Kgs: 8:13, 302; 18:4, 421; 23:11, 409; 24:15, 304
Kinrot, 468
Kirta Epic, 304
Kite, 33; black, 137, 344
Kittens, 258
Kom el-Hisn, 433–34
Koptos, 100
Kothar, 301
Krishna, 367
Kubaba, 83, 309; at Carchemish, 331; at Sardis, 332–33
Kudurrus, 151, 154, 156, 157, 164
Kültepe, 85, 89, 93, 237
Kumarbi, 242
Kuntillet ʿAjrud, 300, 410
Kurgan burials, 311
Kush, 254
Kuthean legend, 362
Kybebe. *See* Kubaba

L

Lachish, 233, 410, 412, 460
Lagash, 391
Lake of Fire, 344
Lake Urmia, 199
Lamaštu, 362, 364, 368, 384
Lamb, 189–91, 276, 296, 298, 321, 378, 384, 396, 399, 401
Lapwing, 122, 138; northern, 37
Lecanomancy, 396. *See also* Divination
Legend of Aqhat, 291, 410
Legend of Kirta, 293, 302
Leopard, 28, 129, 134; apotropaion, 325; in art, 95, 130, 131; at Çatal Höyük, 85, 310; and goddess, 82; and kingship, 267; in literary imagery, 244, 260, 298; in magic, 351; as pet, 120; as prey, 250; in ritual, 326, 328, 329; skin, 339, 342. *See also* Feline
Leopard-men, 250, 328
Lev: 1:14–17, 290; 1:2–3, 10, 392; 1:4, 372; 1–6, 290; 3:1, 6–7, 12, 392; 3:2, 8, 13, 372; 4–5, 397; 4:3, 14, 23, 28,

392; 4:4, 15, 24, 29, 33, 372; 5:6, 15, 18, 25, 392; 5:7, 412; 6:17–23, 397; 7:1–10, 397; 11, 289, 411; 11:21, 40; 14:2–7, 418; 16:15–19, 377; 16:20–22, 372; 16:7–22, 418; 17:7, 306; 22:21, 412; 27:28–29, 395
Leviathan, 224, 305
Lexicography, 272
Libanomancy, 396. *See also* Divination
Liming, 35
Lion, 254, 257, 263, 407; apotropaion, 88, 161, 325; in architecture, 87, 213; in art, 87, 100, 130, 131, 146, 150, 153, 166, 189, 192, 198–203, 216, 223, 356; and Bastet, 340; and bull, 95, 160, 181, 183, 201–3, 220; at Çatal Höyük, 309; in composite creature, 88, 150, 164, 306, 339; constellation, 343; in divination, 274; as divine attribute, 82, 83, 87, 198, 213, 314; as divine pedestal, 90; Elamite, 200; as epithet, 304; and goddess, 222, 224, 332, 410; of Ištar, 164, 368, 369; and kingship, 121, 161, 167, 198, 200, 213, 223, 240, 265, 267, 301, 316–18, 454; in literary imagery, 240, 241, 244, 260, 262, 269, 298, 299, 301, 362, 405; in literature, 272, 276, 281, 296; in magic, 351, 352; with name, 121; Persian, 172; as pet, 121; as prey, 112, 113, 166, 250, 285; range, 27, 134; rhyta, 93; in ritual, 328; as royal epithet, 259, 265; sacrifice, 419; and Samson, 296; skin, 370; statuary, 331; symbolism of, 99, 158, 202, 203, 271; in tales, 256–58, 278; winged, 183, 331; in Zoroastrianism, 200. *See also* Feline
Lion griffin, 229, 331
Lion-man, 250, 328, 363, 364
Lioness, 200; in art, 151, 156
Litan. *See* Leviathan
Litany of Re, 343
Livestock, 238, 241, 327, 348, 457, 465
Lizard, 83, 104, 259, 273, 274, 295; in faunal remains, 462; monitor, 38
Lobster, spiny, 142
Locust, 40, 41, 142, 237, 263, 269, 291, 295, 303, 304; desert, 40; plague, 40–41
Lucian, 335
Lugalbanda, 282
Luxor Temple, 347
Lycia, 334
Lydia, 332–33
Lynx, 286

M

Ma, 333
Maat, 339, 346
Magic, 97, 99, 104, 108, 158, 161, 171, 209, 240, 271, 277, 314, 351–55, 360, 422; analogic, 322; astral, 364; circle, 367, 381, 382; sand, 253; sympathetic, 244, 420
Mal: 4:2, 299
Malatya, 95, 331
Mammals, 6, 10–32, 249, 411; commensal, 8; domesticated, 10; marine, 28
Maraş, 331
Marduk, 369, 370, 373, 380, 389, 393, 396, 400
Mare, 422
Mari, 220, 224–26, 392, 400; funerary offerings at, 402; sacrifice at, 417
Markhor, screw-horned, 13
Marlik, 187, 192, 205
Martin, crag, 139; house, 139
Masos, 464
Master of Animals, 83, 165, 222, 231
Maxims of Ptahhotep, 258
Mazdaism, 180
Medain Saleh, 226
Medicine, 322
Medinet Habu, 348, 349, 351
Mediterranean Sea, 4
Mediums, 349
Megiddo, 213, 225, 233, 460, 467, 472
Mehetweret, 336
Memphis, 355, 356
Merimde, 430, 441, 449
Mesilim, 161
Metamorphosis, 259
Mic: 1:8, 298; 7:14, 297
Mice, 242, 269, 273, 274, 282
Midas City, 332
Milk, cows', 436; goats', 191
Milking, 147, 436
Min, 340, 443; festival of, 349
Minet el-Beida, 217
Minoan genius, 229
Miqne-Ekron, 410, 419, 468, 469, 472, 473
Mistress of Animals, 83, 222, 231, 410

Mixed beings. *See* Fantastic creatures
Mnevis bull, 356
Molech, 418
Mollusk, 84, 142
Mongoose, 273, 274, 278, 357, 365; Egyptian, 104, 134
Monkey, 127, 344; in art, 92, 123, 130, 166, 226, 442; in divination, 274; as gift, 286; green, 133; in humor, 124; in literary imagery, 257, 286; in literature, 288; as pet, 117, 454
Moonfish, 140
Mortuary customs, 8, 419
Moses, 421
Mot, 299, 305, 407
Moths, 274, 282
Mt. Demavend, 4
Mouse, 124, 218, 257, 258, 262, 384; house, 27, 30, 133; in ritual, 377; spiny, 30, 133; wild, 30
Mouse god, 125
Mouth brooding, 44
Mt. Ebal, 412
Mule, 107, 135, 287, 327, 380, 464
Mullet, 431; gray, 141
Murex, 45
Muricidae, 44–45
Mutton, 249, 287, 393, 395
Myrrh trees, 129
Myth of Baal, 296, 299, 302, 303
Mythus, 256–58

N

Nabataeans, 30
Nabonidus, 390
Nabû, 370, 380, 390
Nah: 2:14b, 304; 3:15–17, 303
Naked goddess, 215, 216, 222, 224, 410
Namburbi, 362, 378, 379, 382
Nanay, 390
Nanna, 392
Napirisha, 177, 180
Naram-Sin, 362, 402
Narmer, 100, 103
Narmer palette, 99, 340
Narrative, in art, 165, 173, 230
Narundi, 198, 200
Natural order, 158
Naturalism, 145, 193, 195
Nautilus, 226
Nazimaruttash, 151
Nīdābâ. *See* Freewill Offering
Nebuchadnezzar I, 151
Nebuchadnezzar II, 300, 369, 389, 390
Necromancy, 419
Neder-sacrifice, 395
Nekhbet, 339, 342
Nemrik, 154
Neo-Hittites, 331
Nephthys, 344, 346
Nergal, 370
Netherworld, 361, 362, 368, 372, 374, 378, 379, 382, 387, 393, 403
Netting, 35, 249, 268, 293, 351
New Year's festival, 370
Nile Valley, 97, 127
Nimrod, 293
Nimrud, 213, 234
Ningal, 390
Ningirsu, 164
Ningishzida, 176
Nintu, snake-form, 363
Ninurta, 280, 283, 285; and Anzû, 368
Niraḫ "little snake", 362
Nisaba, 284
Nomadism, 172, 204, 207, 400
Nubia, 450, 471
Nubians, 254
Num: 7:87–88, 290; 19, 413; 21:4–9, 421; 22:21–30, 305; 24:8, 408; 28, 391
Nush-i Jan, 193
Nusku, 380
Nymphs, 41

O

Octopus, 225, 226
Omens, 239; birth, 274, 294, 365; dream, 294; terrestrial, 274, 365
Onager, 18, 107, 147, 156, 218, 470, 471. *See also* Ass: Asian
Ophidophobia, 164
Oracles, 238, 269, 349; bird (*see* Augury); insect, 239
Oriole, golden, 139
Ornithology, 9
Oryx, 21–22, 348, 352; Arabian, 21; beisa, 130; scimitar-horned, 21, 113, 135. *See also* Antelope
Osiris, 263, 344, 348, 349, 352, 355
Osprey, 35
Ostrich, 35, 36, 97, 136, 226, 232, 427; in art, 130; eggs, 129, 226, 390; eggshell, 226, 232, 427; in literary

imagery, 298; plumes, 129, 226, 339; skin, 226; tamed, 453
Otter, 132
Ouroboros, 343
Owl, 8, 277, 298, 462; barn, 35, 102, 138; "eared", 139
Ox, 156, 240, 252; in art, 100; as beast of burden, 105, 446; in composite creature, 306; in divination, 274; foreign, 273; in literary imagery, 254, 257, 261, 278, 295, 297, 298; in literature, 290; in ritual, 327, 366, 390; in tales, 256; wild, 286, 299, 300
Oxyrhynchus, 452

P

Palettes, zoomorphic, 98
Palmyra, 226
Panther, 256, 267, 268, 281. *See also* Leopard
Papyrus Lansing, 262
Parasitic infestations, 9
Pariahs, 292
Pars pro toto, 299; in art, 87, 152
Parthia, 203, 205
Partridge, sand, 35
Pasargadae, 179, 189, 206
Passerine, 114
Passover, 414
Pastoralism, 106, 466
Pausanias, 7.17.9, 333
Peacock, 293
Pegasus, 218
Pelican, 33, 103; dalmatian, 136; white, 34, 136; pink-backed, 136
Pella, 472
Perch, 43; Nile, 43, 141, 430, 431, 434
Persepolis, 179, 183, 187, 189–93, 195, 197–203, 206–8
Pests, 274
Petra, 226
Pets, 27, 37, 238, 274, 303, 368, 449, 454
Philae, 349
Philistines, 212, 296, 297, 411, 469
Phoenicia, 225
Phoenix, 259
Phrygia, 332
Phrygian Mother, 332
Pi-Ramesses, 251
Pig, 14, 38, 147, 273, 274, 430, 431; in art, 108, 125, 154, 185, 442; chthonic associations, 323; in diet, 108, 222, 249, 411, 441; domestic, 135, 462; domestication of, 440, 466; economic exploitation of, 468–70; in Egypt, 440–43; in faunal remains, 441, 464, 467; in food taboos, 393, 394, 411, 443; herding, 442; impurity of, 108, 243, 322, 323, 393, 440; and Lamaštu, 362; in literary imagery, 242–43, 283, 295; in literature, 276; as livestock, 108; in magic, 365, 371; as prey, 250; in ritual, 327, 375, 386, 472; sacrifice, 392–93, 402, 418; skin, 375; squeal of, 243; votive, 100; wild, 469. *See also* Boar; Piglet; Sow
Pig deity, 108
Pigeon, 264, 416, 453; rock, 138
Piglet, 14, 238; in magic, 322; as offering, 323, 442; in ritual, 325, 386; sacrifice, 323
Pintail, 36, 138
Plague, 103
Pleistocene, 4, 466
Pliny, 45
Plover, 35; ringed, 138; spur-winged, 138
Plutarch, V:361.31, 447; V:380.72, 452
Poor Man of Nippur, 287
Porcupine, 392; North African, 133; sacrifice, 392
Pork. *See* Pig: in diet
Poultry, 393, 416
Poultry yard, 453
Pre, 258, 259
Priests, 341, 342, 356
Prophesies of Neferti, 268
Protective Deity, 95, 249, 311, 314
Proverbs, 242, 260, 261, 263, 273, 277, 279, 294, 295; Book of, 294
Prov: 1:17, 294; 5:18–19, 295; 5:19, 304; 6:5, 294, 300; 6:6–8, 295; 7:22–23, 295; 7:23, 300; 11:22, 295; 14:4, 290; 23:31–32, 295; 26:11, 294; 26:2, 300; 28:15, 301; 30:24–28, 295; 30:29–31, 301
Ps: 22:17, 292; 23, 297; 29:6, 299; 59, 303; 59:14–15, 303; 74:1, 297; 74:13–14, 305; 79:13, 297; 89:11, 305; 91:3–4, 300; 92:10, 300; 100:3, 297; 104:26, 305; 124:7, 300
Psammetichus II, 300
Ptah, 340, 355

Pufferfish, 141
Punt, 128, 128–29, 133, 450; Queen of, 124
Puppy, 238, 243; impurity of, 242; in literary imagery, 243; in ritual, 325, 400; sacrifice, 323, 333; in tales, 255
Purification Offering, 413. *See also* Sin offering
Pyramid Texts, 259, 265
Python: African Rock, 140

Q

Qebehsenuef, 346
Qôs, 419
Quail, 35, 138
Qudshu, 339

R

Rabbit, 273, 462
Rahab, 305
Rainfall, 5
Ram, in art, 81, 95, 98, 189, 222, 420; in divination, 349; as epithet, 304; as gift, 286; in magic, 351; in ritual, 322; sacrifice, 416; as scapegoat, 324; in a Thicket, 149
Ram of Mendes, 269
Ramesses II, 130, 267, 344, 348, 356, 436
Ramesses III, 263, 268, 269, 344, 349
Ramesses IV, 344
Raptor. *See* Birds: of prey
Ras Ghanada, 28
Ras Ibn Hani, 422
Rat, 273; black, 27; field, 133
Raven, 284, 298, 362, 369, 377. *See also* Crow
Ray, eagle, 141
Re, 251, 264, 269, 336, 344, 357
Re-Horakhty, 336
Realism, 148, 154–56
Red Sea, 4, 128, 133
Redstart, 139
Reparation Offering, 413. *See also* Guilt Offering
Reptiles, 81, 83, 154, 168, 171, 253, 254, 290, 462
Rhim. *See* Gazelle: marica
Rhinoceros, 97, 128–30, 135, 166, 427
Rhyta, *See* Zoomorphic vessels
Rig Veda, 204
River ordeal, 241
Rock art, 97, 434, 449
Rodentia, 30
Rodents, 30, 176, 218, 248; in divination, 365; in food taboos, 290, 393; in literature, 248; in ritual, 375, 386; sacrifice, 325; as scapegoat, 324
Roller, 139
Royal Cemetery at Ur, 149
Royal propaganda, 165
Ruminants, 10, 11, 152, 411, 412, 443
Rwty, 344

S

Sacrifice, 112, 191, 212, 348, 359; in art, 81, 90, 190; Bedouin, 459; child, 418; covenant, 400–401, 417, 473; divinatory, 396–99; funerary, 402; gender selection in, 397; Hittite, 81; Israelite, 392; in Leviticus, 412–14; occasional, 322, 395–98, 416–18; purity of victim, 276; regular, 320–21, 347–49, 386, 389–95, 412–16; *šĕlāmîm*, 395; symbolism of, 348; treaty, 399–400; at Ugarit, 415–16
Sacrificial fire, 401
Sacrificial lists, 290
Sahara, 33, 427
Sakkara, 356, 358
Salamander, 242, 244, 325
Samson, 296
1 Sam: 2:13–14, 415; 9:12–24, 15, 395; 16:2–5, 414; 17:34–36, 293; 20:6, 414; 22:19, 290; 24:14, 302
2 Sam: 1:23, 301; 9:8, 302; 23:20, 293
Sandgrouse, pin-tailed, 138
Sandpiper, 138
Saqqara, 114
Sarcophagus of Ahiram, 213
Sardis, 332–33
Sargon II, 190, 205, 286; Palace of, 165
Sargon the Great, 402
Ṣarpanitum, 389
Satyr. *See* Goat-demon
Scapegoat, 324, 372, 377, 418
Scarab, 226, 229, 262, 343, 346, 356; pectorals, 346; sacred, 143; sacrifice, 357
Scarab god: *See* Khepri
Scavenging, 427
Scorpion, 41, 42, 142, 362; apotropaion, 352; in art, 104, 151, 156, 158, 185,

224; common yellow, 42; in divination, 365; as divine attribute, 336, 340; fat-tailed, 42; of Išhara, 368; in literature, 275, 277; in magic, 352, 380; mating rituals, 42; protection against, 42; in tales, 253, 254; yellow, 42
Scorpion-man, 363
Scorpionfish, 141
Scythians, 199, 207
Sea cow, 29
Sea Peoples, 233, 268
Seafood, as offering, 392
Seal, Caspian, 28; monk, 28
Sekhmet, 103
Sekhmet-Bastet, 355
Selket, 336, 339
Semen, 362
Sennacherib, 190, 369
Serapeum, 356, 358
Seraphim, 305
Serapis, 355
Serpent, in art, 95, 173, 177, 198; in composite creature, 253, 339, 344; in cosmology, 343; in Garden of Eden, 304; in literary imagery, 261, 268, 269, 277, 282; in magic, 268, 352; in tales, 253, 254, 281. *See also* Illuyanka; Leviathan; Snake; Tannin
Serval, 134
Seth, 339, 340, 348
Seth animal, 128
Seti I, 342, 344, 442
Setne I, 253, 254, 268
Setne II, 260
Seven judges, 378
Shabaka Stone, 251
Shalmanezer III, 224
Shamans, 184
Šamaš, 281, 370, 374, 375, 378, 379, 396, 397, 402
Šauška, 243
Shed, 352
Šedû. *See* Bull: winged
Sheep, 11–12, 194, 238, 431; alum, 286; Armenian moufflon, 12; in art, 107, 108, 154, 185, 186, 222; barbary, 135; black, 380; breeds, 440; in composite creature, 363; in divination, 274, 275; domestic, 136, 185; domestication of, 466; in faunal remains, 462; and goat, 12, 147, 240, 290, 434, 438–40, 458, 468, 472; in literary imagery, 282, 297; in literature, 247, 280; moufflon, 12, 273; mountain, 286, 290, 392; as offering, 389–90, 402; in ritual, 327, 372, 377, 386; sacrifice, 397, 418; in tales, 278; Transcaspian urial, 12; urial, 12; wild, 10, 272, 286
Shelduck, 362, 365, 371; common, 137; ruddy, 137
Shellfish, 45
Shells, 225; in art, 233; cowry, 232; marine, 232; turtle, 232
Šerri and Hurri, 80, 319
Shrew, 104, 133, 262, 274, 357
Shrike, masked, 139; red-backed, 139
Shu, 339
Shwabti, 449
Siberia, 199, 204, 207
Simen Mountains, 13
Sîn, 370, 375, 390
Sin offering, 396, 397
Sinai peninsula, 46
Skink, 274
Small cattle. *See* Sheep: and goat
Snail, 45
Snake, 171, 352; apotropaion, 325, 352; in art, 104, 151, 154, 156, 158, 174, 175–177, 183–84, 215, 224; bite, 295, 422; chthonic associations, 164, 224; cult, 178; in divination, 238, 365; as divine attribute, 216, 362, 363; in faunal remains, 462; figurines, 164; and goddess, 222, 225; horned, 177; in literary imagery, 239–40, 244, 261, 263, 264, 267, 295, 298, 299, 343, 344; in literature, 272, 275, 277; in magic, 380, 405, 421, 422; as offering, 177; oracle, 320; in ritual, 373; sacrifice, 357; symbolism of, 161, 176, 247, 332; in tales, 252–53, 257, 259; transformation into, 259; venomous, 261, 262; and water, 177. *See also* Serpent
Snake god, 176
Snake-tamers, 184
Snipe, painted, 138
Sobek, 102, 259, 357
Solar worship, 409
Solomon, 289, 292, 301; Song of, 297; temple of, 306
Song of Hedammu, 243

Song of Ullikummi, 248
Sorcery, 422
Sounders, 14
Sow, and Min, 443; in ritual, 323, 325; symbolism of, 108. *See also* Pig
Spadefish, 141
Sparrow, 283; house, 139
Spearfishing, 111
Species, 427; distribution, 7; identification in art, 156
Sphinx, 83, 87, 88, 121, 154, 226, 229, 248, 331, 333, 339; androsphinx, 339; cobra-headed, 339; criosphinx, 339; Great, 121; hieracosphinx, 339. *See also* Fantastic creatures
Spider, 42, 147, 303; in art, 312
Spit, in ritual, 373
Spoonbill, 137
Squid, 142
Staff, 421, 422
Stag, 80, 83, 89, 202, 365; in art, 93; as divine attribute, 83; as divine pedestal, 90
Standard of Ur, 471
Stockyards, 348, 391
Stork, 33, 294; black, 136; saddle-billed, 37, 102, 136; whale-headed, 37
Storm God, Anatolian, 87, 90, 92, 244, 314; Hittite, 80, 244, 245, 247, 248, 311, 314, 316, 318, 321, 325, 331; of Nerik, 85; in Syria-Palestine, 215, 220, 223, 231
Story of .... *See* Tale of ...
Strabo, *Geog.*, 12.8.9, 333
Suckling cow motif, 192–94, 220, 300, 366
Sudan, 128, 446
Sukas, 467
Sun disk, 407, 409
Sun God, 245, 248, 311, 318, 344; of Heliopolis, 356
Sun Goddess, 243
Sun Goddess of the Earth, 323
Sura, 334
Surgeonfish, 142
Šurpu-ritual, 397
Susa, 173, 175, 179, 181, 184–87, 194, 198, 200, 204, 206, 208, 281
Swallow, 35, 139, 259, 264, 294, 342
Swan, 189, 226; Bewick's, 137; mute, 137
Swift, 35
Swine. *See* Pig
Swordfish, 141

T

Taanach cult stand, 405, 409, 410
Tale of the cat and the vulture, 258; the Doomed Prince, 255; the Heron and the Turtle, 280; Horus and Seth, 259; the lion and mouse, 256, 257, 269; Ninurta and the Turtle, 280; Setne I, 253; the Shipwrecked Sailor, 252–53; Sinuhe, 266; Truth and Falsehood, 256; Two Brothers, 255, 257, 260; the two jackals and the lion, 257; Wenamun, 260
Tannin, 305
Tarpan, 16, 470
Tašmetu, 370
Tašmišu, 242
Taweret, 351
Teššub, 242, 248, 319
Teal, European, 137
Tel Dan, 408, 412, 419, 467, 472
Tel Haror, 473
Telipinu, 245
Tell Açana, 331
Tell Agrab, 146, 148
Tell el 'Oueili, 154
Tell el-Ajjul, 473
Tell el-Daba, 106, 471, 473
Tell el-Maskhuta, 471
Tell es-Sweyhat, 470
Tell Ibrahim Awad, 433–34
Tell Jemmeh, 468, 472, 473
Ten Commandments, 290
Tepe Gawra, 174, 175
Tepe Giyan, 173, 174, 201
Tepe Sialk, 205
Tern, 35
Tetešhapi, 326
Thebes, 450
Therianthropy, 102, 103, 336–41
Theriomorphic vessels. *See* Zoomorphic vessels
Theriomorphism, 87, 92, 102, 103, 158, 215, 316, 336
Thick-knee, Eurasian, 35
Thoth, 36, 102, 103, 253, 254, 261, 269, 340, 341, 344, 348, 357; and baboon, 456
Thunderbird, 282
Tiamat, 362, 393

Tiger, 237, 281, 286; Caspian, 28
Tigerfish, 140
Tiglath-Pileser I, 285
Tigris-Euphrates River valley, 3
Tilapia, 43, 141, 355; mango, 43, 44; Nile, 43, 44; redbelly, 44
Toad, 140
Tôdâ-sacrifice, 395
Topography, 4
Tortoise, 151, 224, 380, 402
Totemism, 310, 340
Trapping, 114, 293
Tree, sacred, 192, 230, 244, 332, 410; stylized, 216, 221, 231, 232
Triggerfish, 141
Tur: Dagestan/East Caucasian, 13; Kitsan/West Caucasian, 13
Turtle, 38, 98, 185, 225, 272, 280, 402, 427; African Softshell, 139
Turtle dove, 36, 122, 138, 282, 294
Tutankhamun, 113, 344, 346
Tuthmosis III, 129–30, 224, 265, 448

U

Ugarit, 215, 225, 229, 230, 233, 289, 407, 409, 410, 415, 416, 418–20, 422, 424
Ullikummi, 242
Umm-an-Nar, 28
Underworld, 176, 225, 343–44
Ungulates, 10, 13
Uraeus. *See* Cobra
Urartu, 286
Uriah, 296
Urtenu, 422
Uruk, 390, 391

V

Valley of the Kings, 131
Venison, 249
Viper, 175, 184; horned, 102, 140; saw-scaled, 176
Votives, 36, 98, 100, 104, 120, 164, 187, 358
Vow, 395, 398
Vulture, 185, 258, 259, 264, 268, 310, 322, 346; Egyptian, 102, 137; fledgling, 258; griffon, 137; lappet-faced, 36, 137
Vulture crown, 342
Vulture deity, 342. *See also* Nekhbet

W

Wadjet, 341
War god, 87, 220, 314
Warbler, 139
Warthog, 132, 427
Wasp, 303, 369
Watchdog, 292, 293. *See also* Dog: guardian
Water buffalo, 15, 286
Waterfowl, 110
Weasel, striped, 134
Weather god. *See* Storm God
Wepwawet, 339
Western Desert, 427
Wew, 385
Whale, 29
White Wagtail, 139
Whitethroat, 35
Wigeon, European, 137
Wildebeest, 37
Wings, 264, 266, 300, 305, 306, 346; of bee, 245; of eagle, 300
Wisent. *See* Bison
Witchcraft, 377
Wolf, 26, 255, 272; apotropaion, 325; in divination, 274; domestication of, 27; howling of, 282; language of, 255; in literary imagery, 298, 362; in literature, 276, 278; in ritual, 326, 328; "sacrifice", 348; symbolism of, 241
Wolf-men, 250, 328
Worm, 272, 277

Y

Yahweh, 297, 299–301, 304–6, 407–9, 411, 417, 418, 421; temple of, 303, 408, 421
Yamm, 301, 305
Yaqush, 468
Yarihu, 302
Yazılıkaya, 82, 86, 88, 316

Z

Zagros, 4
Zebra, 16
Zebu, 15, 106, 136, 435. *See also* Cattle: humped
Zeus, 333
Zincirli, 331

Ziwiye, 206, 234
Zoological (game) parks, 167, 201, 220, 224, 249, 286, 454
Zoomorphic vessels, 88, 89, 92–95, 100, 149, 164, 188, 205, 216, 220, 222, 226, 312
Zoroastrian religion, 180, 191, 193, 194, 198, 202, 207–9

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